Analytical Data Package Prepared For

Pacific Northwest National Lab

Radiochemical Analysis By

STL Richland STLRL

2800 G.W. Way, Richland Wa, 99354, (509)-375-3131.

Data Package Contains _____ Pages

Report Nbr: 33199

SDG Nbr	ORDER Nbr	CLIENT ID NUMBER	LOT Nbr	WORK ORDER	RPT DB ID	BATCH
W04970	A06-007	B1JK36	J6G220144-2	H9TN21AA	9H9TN210	6207523
		B1JK36	J6G220144-2	H9TN21AC	9H9TN210	6207520
		B1JK35	J6G220144-3	H9TPA1AA	9H9TPA10	6207523
		B1JK35	J6G220144-3	H9TPA1AC	9H9TPA10	6207520
		B1JK37	J6G220144-4	H9TPK1AA	9H9TPK10	6207523
		B1JK37	J6G220144-4	H9TPK1AC	9H9TPK10	6207520
		B1JK37	J6G220144-4	H9TPK1AD	9H9TPK10	6207522
		B1JK37	J6G220144-4	H9TPK1AE	9H9TPK10	6207510
		B1JK38	J6G220144-5	H9TP01AA	9H9TP010	6207523
		B1JK38	J6G220144-5	H9TP01AC	9H9TP010	6207520
		B1JK38	J6G220144-5	H9TP01AD	9H9TP010	6207522
		B1JK38	J6G220144-5	H9TP01AE	9H9TP010	6207510
	S06-006	B1J8L9	J6G240170-1	H9WL41AA	9H9WL410	6207510
	W06-007	B1JLH3	J6G240171-1	H9WMV1AA	9H9WMV10	6207510
		B1JLH0	J6G240173-1	H9WM51AA	9H9WM510	6207510

Comments:

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SDG Nbr	ORDER Nbr	CLIENT ID NUMBER	LOT Nbr	WORK ORDER	RPT DB ID	ВАТСН
W04970	106-049	B1JKW9	J6G240196-1	H9WW01AA	9H9WW010	6207523
		B1JKW9	J6G240196-1	H9WW01AC	9H9WW010	6207520
		B1JKW9	J6G240196-1	H9WW01AD	9H9WW010	6207525
		B1JKW9	J6G240196-1	H9WW01AE	9H9WW010	6207522
	A06-007	B1JK33	J6G240197-1	H9WW51AA	9H9WW510	6207523
		B1JK33	J6G240197-1	H9WW51AC	9H9WW510	6207520
		B1JK33	J6G240197-1	H9WW51AD	9H9WW510	6207522
		B1JK33	J6G240197-1	H9WW51AE	9H9WW510	6207510
	W06-007	B1JLJ5	J6G250296-1	H901A1AA	9H901A10	6207510
	S06-007	B1JLD3	J6G250319-1	H901Q1AA	9H901Q10	6207513
		B1JLD3	J6G250319-1	H901Q1AC	9H901Q10	6207517
		B1JLD3	J6G250319-1	H901Q1AD	9H901Q10	6207518
		B1JLD3	J6G250319-1	H901Q1AE	9H901Q10	6207520
		B1JLD3	J6G250319-1	H901Q1AG	9H901Q10	6207512
		B1JLD2	J6G250319-2	H90121AA	9Н901210	6207513
		B1JLD2	J6G250319-2	H90121AC	9Н901210	6207517
		B1JLD2	J6G250319-2	H90121AD	9H901210	6207518
		B1JLD2	J6G250319-2	H90121AE	9H901210	6207520
		B1JLD2	J6G250319-2	H90121AG	9H901210	6207512
	W06-008	B1K2H2	J6G250322-1	H90221AA	9Н902210	6207523
		B1K2H2	J6G250322-1	H90221AC	9Н902210	6207513
		B1K2H2	J6G250322-1	H90221AD	9Н902210	6207517
		B1K2H2	J6G250322-1	H90221AE	9H902210	6207518
		B1K2H2	J6G250322-1	H90221AF	9Н902210	6207522
	S06-007	B1JLC7	J6G250324-1	H903K1AA	9H903K10	6207523
		B1JLC9	J6G250324-2	H903L1AA	9H903L10	6207523

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SDG Nbr	ORDER Nbr	CLIENT ID NUMBER	LOT Nbr	WORK ORDER	RPT DB ID	BATCH	
W04970	S06-007	B1JLC5	J6G250324-3	H903M1AA	9H903M10	6207523	

Certificate of Analysis

Pacific Northwest National Laboratories Sigma V Building Richland, WA 99352

September 8, 2006

Attention: Dot Stewart

SAF Number : A06-007, S06-006, W06-007, S06-007, I06-049,

W06-008

Date SDG Closed : July 25, 2006 Number of Samples : Twenty (20) Sample Type : Water

Sample Type : Water SDG Number : W04970

Data Deliverable : 45-Day / Summary

CASE NARRATIVE

I. Introduction

Between July 21, 2006 and July 25, 2006, twenty water samples were received at STL Richland (STLR) for radiochemical analysis. Upon receipt, the samples were assigned the following laboratory ID numbers to correspond with the Pacific Northwest National Laboratories (PGW) specific IDs:

PGW ID#	STLR ID#	MATRIX	DATE OF RECEIPT
B1JK35	Н9ТРА	WATER	7/21/06
B1JK36	H9TN2	WATER	7/21/06
B1JK37	H9TPK	WATER	7/21/06
B1JK38	H9TP0	WATER	7/21/06
B1J8L9	H9WL4	WATER	7/24/06
B1JLH3	H9WMV	WATER	7/24/06
B1JLH0	H9WM5	WATER	7/24/06
BIJL17	H9WWV	WATER	7/24/06
BIJL19	H9WWW	WATER	7/24/06
В1ЛL20	H9WWX	WATER	7/24/06
B1JKW9	H9WW0	WATER	7/24/06
B1JK33	H9WW5	WATER	7/24/06
B1JLJ5	H901A	WATER	7/25/06

B1JLJ2	H901D	WATER	7/25/06	
B1JLD3	H901Q	WATER	7/25/06	
B1JLD2	H9012	WATER	7/25/06	
B1K2H2	H9022	WATER	7/25/06	
B1JLC7	H903K	WATER	7/25/06	
B1JLC9	H903L	WATER	7/25/06	
B1JLC5	H903M	WATER	7/25/06	

II. Sample Receipt

The samples were received in good condition and no anomalies were noted during check-in.

III. Analytical Results/Methodology

The analytical results for this report are presented by laboratory sample ID. Each set of data includes sample identification information, analytical results and the appropriate associated statistical errors.

The requested analyses were:

Alpha Spectroscopy

Uranium 234, 235 and 238 by method RICH-RC-5039

Gas Proportional Counting

Gross Alpha by method RICH-RC-5014 Gross Beta by method RICH-RC-5014 Strontium-90 by method RICH-RC-5006

Gamma Spectroscopy

Gamma Spec (LL) by method RICH-RC-5017 Iodine-129 (LL) by method RICH-RC-5025

Liquid Scintillation Counting

Enriched Tritium by method RICH-RC-5024 Technetium-99 by TEVA method RICH-RC-5065

Tritium by method RICH-RC-5007

Laser Induced Phosphorimetry

Total Uranium by method RICH-RC-5058

IV. Quality Control

The analytical results for each analysis performed includes a minimum of one laboratory control sample (LCS), one method (reagent) blank, and one duplicate sample analysis. Any exceptions have been noted in the "Comments" section.

QC and sample results are reported in the same units.

V. Comments

Alpha Spectroscopy

Uranium 234, 235 and 238 by method RICH-RC-5039

The LCS, batch blank, samples and sample duplicate (B1JLD3) results are within contractual requirements.

Gas Proportional Counting

Gross Alpha by method RICH-RC-5014:

Reduced volumes were analyzed based on elevated screen results for samples B1JLD2, B1JLD3, B1K2H2 and B1JLD2 DUP. Sample B1K2H2 does not meet CRDL due to high dissolved solids in the sample. Other than noted the LCS, batch blank, samples and sample duplicate (B1JLD2) results are within contractual requirements.

Gross Beta by method RICH-RC-5014:

B1K2H2 and B1K2H2 DUP do not meet the CRDL; reduced volumes were analyzed based on an elevated screen results. The results of these two samples are greater than the MDA which is greater than the CRDL. Other than noted, the LCS, batch blank, samples and sample duplicate (B1K2H2) results are within contractual requirements.

Strontium-90 by method RICH-RC-5006

The LCS, batch blank, samples and sample duplicate (B1JKW9) results are within contractual requirements.

Gamma Spectroscopy

Gamma Spec (LL) by method RICH-RC-5017:

Sample B1K2H2 has a slightly elevated MDA (6.386 pCi/L compared to 6.0 pCi/L). This is due to the high background caused by the Compton Scattering of the large amount of Co60 found in the sample. Other than noted the LCS, batch blank, samples and sample duplicate (B1JLD3) results are within contractual requirements.

<u>Iodine-129 (LL)</u> by method RICH-RC-5025:

The LCS, batch blank, samples and sample duplicate (B1JK33) results are within contractual requirements.

Liquid Scintillation Counting

Technetium-99 by TEVA method RICH-RC-5065:

The LCS, batch blank, samples, sample duplicate (B1JK37), and sample matrix spike (B1JK38) results are within contractual requirements.

Tritium by method RICH-RC-5007:

The LCS, batch blank, samples and sample duplicate (B1JLC7) results are within contractual requirements.

Enriched Tritium by method RICH-RC-5024

The enriched tritium analysis was not completed at the time of reporting.

Total Uranium

Total Uranium by method RICH-RC-5058:

The LCS, batch blank, samples, sample duplicate (B1JLH0), and sample matrix spike (B1JLH3) results are within contractual requirements.

I certify that this Certificate of Analysis is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager, or a designee as verified by the following signature.

Reviewed and approved:

Sherryl A. Adam Project Manager

Drinking Water Method Cross References

	DRINKING WATER	R ASTM METHOD CROSS REFERENCES
Referenced Method	Isotope(s)	STL Richland's SOP number
EPA 901.1	Cs-134, I-131	RICH-RC-5017
EPA 900.0	Alpha & Beta	RICH-RC-5014
EPA 903.1	Ra-226	RICH-RC-5005
EPA 904.0	Ra-228	RICH-RC-5005
EPA 905.0	Sr89/90	RICH-RC-5006
ASTM D2460	Total Radium	RICH-RC-5027
Standard Method 7500-U-C & ASTM D5174	Uranium	RICH-RC-5058
EPA 906.0	Tritium	RICH-RC-5007
NOTE:		
The Gross Alpha LCS is prepared with Am-24		
The Gross Beta LCS is prepared with Sr/Y-90) (unless otherwise s	pecified in the case narrative)

Uncertainty Estimation

STL Richland has adopted the internationally accepted approach to estimating uncertainties described in "NIST Technical Note 1297, 1994 Edition". The approach, "Law of Propagation of Errors", involves the identification of all variables in an analytical method which are used to derive a result. These variables are related to the analytical result (R) by some functional relationship, R = constants * f(x,y,z,...). The components (x,y,z) are evaluated to determine their contribution to the overall method uncertainty. The individual component uncertainties (u_i) are then combined using a statistical model that provides the most probable overall uncertainty value. All component uncertainties are categorized as type A, evaluated by statistical methods, or type B, evaluated by other means. Uncertainties not included in the components, such as sample homogeneity, are combined with the component uncertainty as the square root of the sum-of-the-squares of the individual uncertainties. The uncertainty associated with the derived result is the combined uncertainty (u_c) multiplied by the coverage factor (1,2, or 3).

When three or more sample replicates are used to derive the analytical result, the type A uncertainty is the standard deviation of the mean value (S/vn), where S is the standard deviation of the derived results. The type B uncertainties are all other random or non-random components that are not included in the standard deviation.

The derivation of the general "Law of Propagation of Errors" equations and specific example are available on request.

Report Definitions

An agreed upon activity level used to trigger some action when the final result is greater than or equal to the Action Action Lev Level. Often the Action Level is related to the Decision Limit. Batch The QC preparation batch number that relates laboratory samples to QC samples that were prepared and analyzed together. Bias Defined by the equation (Result/Expected)-1 as defined by ANSI N13.30. COC No Chain of Custody Number assigned by the Client or STL Richland. Poisson counting statistics of the gross sample count and background. The uncertainty is absolute and in the same Count Error (#s) units as the result. For Liquid Scintillation Counting (LSC) the batch blank count is the background. All known uncertainties associated with the preparation and analysis of the sample are propagated to give a measure Total Uncert (#s) of the uncertainty associated with the result, u_c the combined uncertainty. The uncertainty is absolute and in the u_c - Combined same units as the result. Uncertainty. The coverage factor defines the width of the confidence interval, 1, 2 or 3 standard deviations. (#s), Coverage Factor Contractual Required Detection Limit as defined in the Client's Statement Of Work or STL Richland "default" CRDL (RL) nominal detection limit. Often referred to the reporting level (RL) Decision Level based on instrument background or blank, adjusted by the Efficiency, Chemical Yield, and Volume Lc associated with the sample. The Type I error probability is approximately 5%. Lc=(1.645 * Sqrt(2*(BkgrndCnt/BkgrndCntMin)/SCntMin)) * (ConvFct/(Eff*Yld*Abn*Vol) * IngrFct). For LSC methods the batch blank is used as a measure of the background variability. Lc cannot be calculated when the background count is zero. The number assigned by the LIMS software to track samples received on the same day for a given client. The Lot-Sample No sample number is a sequential number assigned to each sample in the Lot. Detection Level based on instrument background or blank, adjusted by the Efficiency, Chemical Yield, and Volume MDC|MDA with a Type I and II error probability of approximately 5%. MDC = (4.65 *Sqrt((BkgrndCnt/BkgrndCntMin)/SCntMin) + 2.71/SCntMin) * (ConvFct/(Eff * Yld * Abn * Vol) * IngrFct). For LSC methods the batch blank is used as a measure of the background variability. **Primary Detector** The instrument identifier associated with the analysis of the sample aliquot. The U-234 result divided by the U-238 result. The U-234/U-238 ratio for natural uranium in NIST SRM 4321C is Ratio U-234/U-238 1.038. Ratio of the Result to the MDC. A value greater than 1 may indicate activity above background at a high level of Rst/MDC confidence. Caution should be used when applying this factor and it should be used in concert with the qualifiers associated with the result. Ratio of the Result to the Total Uncertainty. If the uncertainty has a coverage factor of 2 a value greater than 1 may Rst/TotUcert indicate activity above background at approximately the 95% level of confidence assuming a two-sided confidence interval. Caution should be used when applying this factor and it should be used in concert with the qualifiers associated with the result. Sample Identifier used by the report system. The number is based upon the first five digits of the Work Order Report DB No Number. The equation Replicate Error Ratio = (S-D)/[sqrt(TPUs² + TPUd²)] as defined by ICPT BOA where S is the original RER sample result, D is the result of the duplicate, TPUs is the total uncertainty of the original sample and TPUd is the total uncertainty of the duplicate sample. SDG Sample Delivery Group Number assigned by the Client or assigned by STL Richland upon sample receipt. The sum of the reported alpha spec results for tests derived from the same sample excluding duplicate result where Sum Rpt Alpha the results are in the same units. Spec Rst(s) Work Order The LIMS software assign test specific identifier. The recovery of the tracer added to the sample such as Pu-242 used to trace a Pu-239/40 method. Yield

9/7/2006 2:29:32 PM

FormatType: FEAD

Version: 05

FormNbr: R

STL Richland Report

Rpt Nbr: 33199

File Name: h:\Reportdb\edd\FeadIV\Rad\W04970.Edd, h:\Reportdb\edd\FeadIV\Rad\33199.Edd

Lab Code: STLRL

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Lab Sample Id: 9H901210	Client Id: B1JLD2	Test User	Contract Nbr MW6-SBB-A1	SAF Nb S06-007	r Sdg Nbr: W04970	QC Type		Moisture/ Solids%*:	Distilled Volume	Sample On Date:		D	ection Pate: 006 10:01	
Batch	Analyte	CAS#	Result	Unit	CntU 2S	TotU 2S	Qual	MDA T	rcYield	Method	Alq Size	Unit	Analy Date/Time	Act
6207513	ALPHA	12587-46-1	9.85E-01	pCi/L	9.3E-01	9.5E-01	U	1.55E+00	100.0	9310_ALPHABETA	5.62E-02	L	08/16/2006 11:46	1
6207517	BETA	12587-47-2	1.30E+01	pCi/L	1.6E+00	2.3E+00		2.02E+00	100.0	9310_ALPHABETA	1.98E-01	L	08/15/2006 09:56	1
6207518	BE-7	13966-02-4	1.34E+01	pCi/L	1.4E+01	1.4E+01	U	2.88E+01		GAMMALL_GS	2.0025E+00	L	08/09/2006 16:13	3
6207518	CO-60	10198-40-0	4.25E-01	pCi/L	1.9E+00	1.9E+00	U	3.83E+00		GAMMALL_GS	2.0025E+00	L	08/09/2006 16:13	3 [
6207518	CS-134	13967-70-9	3.74E-01	pCi/L	1.5E+00	1.5E+00	U	3.00E+00		GAMMALL_GS	2.0025E+00	L	08/09/2006 16:13	3
6207518	CS-137	10045-97-3	-6.69E-01	pCi/L	1.4E+00	1.4E+00	U	2.44E+00		GAMMALL_GS	2.0025E+00	L	08/09/2006 16:13	3 1
6207518	EU-152	14683-23-9	8.82E-01	pCi/L	3.9E+00	3.9E+00	U	7.27E+00		GAMMALL_GS	2.0025E+00	L	08/09/2006 16:13	3 1
6207518	EU-154	15585-10-1	6.74E+00	pCi/L	4.3E+00	4.3E+00	U	1.07E+01		GAMMALL_GS	2.0025E+00	L	08/09/2006 16:13	3 I
6207518	EU-155	14391-16-3	1.15E+00	pCi/L	4.0E+00	4.0E+00	U	7.14E+00		GAMMALL_GS	2.0025E+00	L	08/09/2006 16:13	3 I
6207518	K-40	13966-00-2	2.43E+01	pCi/L	2.8E+01	2.8E+01	U	3.23E+01		GAMMALL_GS	2.0025E+00	L	08/09/2006 16:13	3 1
6207518	RU-106	13967-48-1	-1.86E+01	pCi/L	1.7E+01	1.7E+01	U	2.60E+01		GAMMALL_GS	2.0025E+00	L	08/09/2006 16:13	3 1
6207518	SB-125	14234-35-6	-7.30E-01	pCi/L	4.6E+00	4.6E+00	U	8.12E+00		GAMMALL_GS	2.0025E+00	L	08/09/2006 16:13	3
6207520	I-129L	15046-84-1	-3.38E-03	pCi/L	1.3E-01	1.3E-01	U	2.43E-01	85.4	I129LL_SEP_LEPS	3.9183E+00	L	08/30/2006 14:57	<i>'</i>
6207512	U-234	13966-29-5	8.39E-02	pCi/L	1.1E-01	1.1E-01	U	1.52E-01	97.1	UISO_PLATE_AEA	2.039E-01	L	08/17/2006 10:56	6 I
6207512	U-235	15117-96-1	-7.30E-03	pCi/L	8.4E-03	8.5E-03	U	1.52E-01	97.1	UISO_PLATE_AEA	2.039E-01	L	08/17/2006 10:56	6 1
6207512	U-238	U-238	1.58E-02	pCi/L	6.2E-02	6.2E-02	U	1.80E-01	97.1	UISO_PLATE_AEA	2.039E-01	L	08/17/2006 10:56	6 1
Lab Sample Id:		Test User	Contract Nbr	SAF Nb	Nbr:	71		Moisture/ Solids%*:	Distilled Volume	Sample On Date:			lection Date:	
9H901A10	B1JLJ5		MW6-SBB-A1										006 13:53	
Batch 6207510	Analyte Uranium	CAS# 7440-61-1	Result 2.54E-02	Unit ug/L	CntU 2S 2.8E-03	TotU 2S 2.8E-03	Qua U	MDA 8.32E-02	TrcYield	Method UTOT_KPA	Alq Size 2.52E-02	Unit ML	Analy Date/Time 08/18/2006 11:42	Act
Lab Sample Id: 9H901Q10		Test User	Contract Nbr MW6-SBB-A1	SAF N b	or Sdg Nbr: W04970	Тур		Moisture/ Solids%*:	Distilled Volume	Sample On Date:			lection Date: 2006 10:01	
		CAS#	Result		CntU 2S	TotU 2S	Qua	I MDA	TrcYield	Method	Alq Size	Unit	Analy Date/Time	Act
Batch 6207513	Analyte ALPHA	12587-46-1	5.92E-02	pCi/L	4.9E-01	4.9E-01	U	1.12E+00		9310 ALPHABETA		L	08/16/2006 11:46	
6207517	BETA	12587-47-2	1.12E+01	pCi/L	1.6E+00		_	2.23E+00		9310 ALPHABETA		L	08/15/2006 09:56	
6207517	BE-7	13966-02-4	-4.25E+00	pCi/L		1.2E+01	U	2.06E+01		GAMMALL GS	1.9804E+00	L	08/09/2006 16:12	
6207518	CO-60	10198-40-0	-1.40E+00	pCi/L		1.6E+00	U	2.47E+00		GAMMALL GS	1.9804E+00	L	08/09/2006 16:12	
6207518	CS-134	13967-70-9	-8.65E-01	•	1.6E+00			2.73E+00		GAMMALL_GS	1.9804E+00	L	08/09/2006 16:12	
020/310	00-104	10007-70-9	-0.00L-01	PONE				2.702.700			//C // //			

STL Richland

U Qual - Analyzed for, but the result is less than the Mdc or gamma scan did not identify the nuclide.

J Qual - No U qualifier has been assigned and the result is below the Reporting Limit (CRDL).

B Qual- Analyte was found in the associated laboratory blank above the MDC.

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FormNbr	: R	FormatType: FE	EAD Versio	on: 05	Rpt N	br: 33199		File Name: h	:\Reportdb\e	edd\FeadIV\Rad\W0497	70.Edd, h:\Rep	ortdb\ed	ld\FeadIV\Rad\3	3199.E	dd
207518	CS-137	10045-97-3	2.53E-01	pCi/L	1.3E+00	1.3E+00	U	2.54E+00		GAMMALL_GS	1.9804E+00	L	08/09/2006	16:12	. 1
207518	EU-152	14683-23-9	3.07E+00	pCi/L	3.8E+00	3.8E+00	U	7.33E+00		GAMMALL_GS	1.9804E+00	L	08/09/2006	16:12	
3207518	EU-154	15585-10-1	-2.34E+00	pCi/L	4.3E+00	4.3E+00	U	7.46E+00		GAMMALL_GS	1.9804E+00	L	08/09/2006	16:12	: 1
207518	EU-155	14391-16-3	2.38E+00	pCi/L	2.7E+00	2.7E+00	U	5.41E+00		GAMMALL_GS	1.9804E+00	L	08/09/2006	16:12	
6207518	K-40	13966-00-2	7.99E+00	pCi/L	3.5E+01	3.5E+01	U	1.71E+01		GAMMALL_GS	1.9804E+00	L	08/09/2006	16:12	.
6207518	RU-106	13967-48-1	-5.85E+00	pCi/L	1.4E+01	1.4E+01	U	2.47E+01		GAMMALL_GS	1.9804E+00	L	08/09/2006	16:12	
3207518	SB-125	14234-35-6	-2.26E+00	pCi/L	3.4E+00	3.4E+00	U	5.76E+00		GAMMALL_GS	1.9804E+00	L	08/09/2006	16:12	
5207520	I-129L	15046-84-1	2.22E-02	pCi/L	1.5E-01	1.5E-01	U	2.84E-01	89.5	I129LL_SEP_LEPS	3.9189E+00	L	08/30/2006	14:57	
6207512	U-234	13966-29-5	3.28E-02	pCi/L	6.6E-02	6.6E-02	U	8.88E-02	84.4	UISO_PLATE_AEA	1.988E-01	L	08/17/2006	10:53	
6207512	U-235	15117-96-1	1.97E-02	pCi/L	6.8E-02	6.8E-02	U	1.85E-01	84.4	UISO_PLATE_AEA	1.988E-01	L	08/17/2006	10:53	;
3207512	U-238	U-238	1.97E-02	pCi/L	6.8E-02	6.8E-02	U	1.85E-01	84.4	UISO_PLATE_AEA	1.988E-01	L	08/17/2006	10:53	;
Lab Sample Id:	Client ld:	Test User	Contract Nbr	SAF Nb	Nbr:	QC Type):	Moisture/ Solids%*:	Distilled Volume	Sample On Date:		ŀ	llection Date:		
9H902210	B1K2H2	V	/IW6-SBB-A1	W06-008	W04970)						07/25/2	2006 09:15		
Batch	Analyte	CAS#	Result			TotU 2S	Qua		rcYield	Method	Alq Size	Unit	Analy Date/T		A
207523	H-3	10028-17-8	9.55E+04	pCi/L	9.8E+02	4.0E+03		2.85E+02		906.0_H3_LSC	5.00E-03	L	08/02/2006		
8207513	ALPHA	12587-46-1	8.89E+00	pCi/L	8.5E+00		U	1.45E+01		9310_ALPHABETA		L	08/16/2006		
6207517	BETA	12587-47-2	1.07E+04	•	1.4E+02			3.31E+01	100.0	9310_ALPHABETA		L	08/15/2006		
5207518	BE-7	13966-02-4	4.89E+00	pCi/L	1.9E+01		U	3.47E+01		GAMMALL_GS	1.9738E+00	L	08/09/2006		
6207518	CO-60	10198-40-0	2.90E+02	pCi/L	3.9E+01			5.28E+00		GAMMALL_GS	1.9738E+00	L	08/09/2006		
5207518	CS-134	13967-70-9	1.83E+00	pCi/L		3.3E+00	U	6.16E+00		GAMMALL_GS	1.9738E+00	L	08/09/2006		
6207518	CS-137	10045-97-3	7.76E-01	pCi/L	- "	3.4E+00	U	6.39E+00		GAMMALL_GS	1.9738E+00	L	08/09/2006		
5207518	EU-152	14683-23-9	1.68E+00	pCi/L	5.5E+00	5.5E+00	U	9.82E+00		GAMMALL_GS	1.9738E+00	L	08/09/2006		
6207518	EU-154	15585-10-1	1.28E+00	pCi/L		7.0E+00	U	1.33E+01		GAMMALL_GS	1.9738E+00		08/09/2006		
5207518	EU-155	14391-16-3	-1.05E+00	pCi/L	5.5E+00	5.5E+00	U			GAMMALL_GS	1.9738E+00		08/09/2006		
6207518	K-40	13966-00-2	-7.58E+00	pCi/L	3.6E+01	3.6E+01	U			GAMMALL_GS	1.9738E+00		08/09/2006		
6207518	RU-106	13967-48-1	-1.86E+01	pCi/L	2.1E+01	2.1E+01	U	3.49E+01		GAMMALL_GS	1.9738E+00	L	08/09/2006		
6207518	SB-125	14234-35-6	1.31E+00	pCi/L	5.1E+00	5.1E+00	U	9.37E+00		GAMMALL_GS	1.9738E+00	L	08/09/2006	16:14	1
6207522	TC-99	14133-76-7	4.29E+04	pCi/L	1.1E+02	2.9E+03		1.00E+01	100.0	TC99_ETVDSK_LS	1.25E-01	L	08/06/2006	04:30)
Lab Sample Id:		Test User	Contract Nbr	SAF Nb	Nbr:	,,,		Moisture/ Solids%*:	Distilled Volume				llection Date:		
9H903K10	B1JLC7	1	MW6-SBB-A1	S06-007	W04970)						07/25/	2006 08:50		

STL Richland

rptFeadRadSummaryEdd v3.48

U Qual - Analyzed for, but the result is less than the Mdc or gamma scan did not identify the nuclide.

J Qual - No U qualifier has been assigned and the result is below the Reporting Limit (CRDL).

B Qual- Analyte was found in the associated laboratory blank above the MDC.

9/7/2006 2:29:32 PM STL Richland Report Lab Code: STLRL

File Name: h:\Reportdb\edd\FeadIV\Rad\W04970.Edd, h:\Reportdb\edd\FeadIV\Rad\33199.Edd FormatType: FEAD Version: 05 Rpt Nbr: 33199 FormNbr: R Batch Analyte CAS# Result Unit CntU 2S TotU 2S Qual MDA TrcYield Method Alq Size Unit Analy Date/Time Act 10028-17-8 2.79E+03 2.0E+02 2.5E+02 2.85E+02 100.0 906.0 H3 LSC 5.00E-03 08/02/2006 09:05 6207523 H-3 pCi/L QC Distilled Lab Client Test Contract SAF Nbr Sdq Moisture/ Sample Collection Nbr: Solids%*: On Date: Date: Sample Id: ld: User Nbr Type: Volume B1JLC9 W04970 07/25/2006 08:31 9H903L10 MW6-SBB-A1 S06-007 TotU 2S CAS# CntU 2S Qual MDA TrcYield Method Ala Size Unit Analy Date/Time Act Analyte Result Unit Batch 3.04F+02.100.0 906.0 H3 LSC 6207523 H-3 10028-17-8 2.84F+03 2.1E+02 2.6E+02 5.00F-03 08/02/2006 15:54 SAF Nbr Sda QC Moisture/ Distilled Sample Collection Lab Client Test Contract Nbr: Type: Solids%*: On Date: Date: Nbr Volume Sample Id: ld: User 07/25/2006 09:08 9H903M10 B1JLC5 MW6-SBB-A1 S06-007 W04970 Alg Size Analy Date/Time CAS# Result Unit CntU 2S TotU 2S Qual MDA TrcYield Method Unit Act Batch Analyte 3.8E+02 6.5E+02 3.03E+02 100.0 906.0 H3 LSC 5.00E-03 08/02/2006 17:16 6207523 H-3 10028-17-8 1.23E+04 pCi/L Distilled Collection Lab Client Test Contract SAF Nbr Sda QC Moisture/ Sample Nbr: Solids%*: On Date: Date: Sample Id: ld: User Nbr Type: Volume 9H9TN210 B1JK36 MW6-SBB-A1 A06-007 W04970 07/21/2006 10:29 TotU 2S Qual MDA TrcYield Method Alq Size Analy Date/Time Batch Analyte CAS# Result Unit CntU 2S Unit Act 9.33E+01 1.2E+02 1.3E+02 U 2.84E+02 100.0 906.0 H3 LSC 5.00E-03 08/01/2006 23:32 6207523 H-3 10028-17-8 U I129LL_SEP_LEPS 3.9076E+00 08/30/2006 11:28 1.01E-01 pCi/L 1.4E-01 1.4E-01 2.81E-01 88.4 6207520 I-129L 15046-84-1 Distilled Collection Contract SAF Nbr Sda QC Moisture/ Sample Lab Client Test Nbr Nbr: Type: Solids%*: Volume On Date: Date: ld: User Sample Id: 07/21/2006 07:45 9H9TP010 B1JK38 MW6-SBB-A1 A06-007 W04970 CAS# Result CntU 2S TotU 2S Qual MDA TrcYield Method Ala Size Unit Analy Date/Time Act Batch Analyte U 2.86E+02 100.0 5.00E-03 L 08/02/2006 03:38 6207523 H-3 10028-17-8 9.76E+01 pCi/L 1.2E+02 1.3E+02 906.0 H3 LSC 1.7E-01 1.7E-01 U 2.23E-01 88.4 1129LL SEP LEPS 3.9159E+00 L 08/30/2006 13:12 6207520 I-129L 15046-84-1 -3.16E-01 pCi/L TC99 ETVDSK LS 1.25E-01 08/06/2006 04:29 6207522 TC-99 14133-76-7 1.35E+00 pCi/L 4.1E+00 6.3E+00 U 9.92E+00 100.0 L ug/L U 8.19E-02 UTOT KPA 2.56E-02 MI 08/18/2006 11:19 6207510 Uranium 7440-61-1 1.25E-02 1.3E-03 1.3E-03 QC Distilled Sample Collection Contract SAF Nbr Sdg Moisture/ Client Lab Test Date: Sample Id: User Nbr Nbr: Type: Solids%*: Volume On Date: ld: W04970 07/21/2006 12:11 9H9TPA10 B1JK35 MW6-SBB-A1 A06-007 Analy Date/Time Act CAS# Result Unit CntU 2S TotU 2S Qual MDA TrcYield Method Alg Size Unit Batch Analyte 906.0 H3 LSC 5.00E-03 L 08/02/2006 00:54 1.7E+02 1.9E+02 2.86E+02 100.0 6207523 H-3 10028-17-8 1.43E+03 pCi/L 08/30/2006 11:29 3.50E-02 1.4E-01 1.4E-01 U 2.68F-01 84.3 1129LL SEP LEPS 3.9137E+00 L I-129L pCi/L 6207520 15046-84-1 QC Distilled Sample Collection SAF Nbr Moisture/ Sdg Lab Client Test Contract Solids%*: Volume On Date: Date: User Nbr Nbr: Type: Sample Id: ld:

STL Richland

U Qual - Analyzed for, but the result is less than the Mdc or gamma scan did not identify the nuclide.

J Qual - No U qualifier has been assigned and the result is below the Reporting Limit (CRDL).

B Qual- Analyte was found in the associated laboratory blank above the MDC.

9/7/2006 2:29:32 PM	STL Richland Report	Lab Code: STLRL

FormNbr	r: R	FormatType: F	EAD Vers i	on: 05	Rpt N	br: 33199		File Name:	h:\Reportdb\e	edd\FeadIV\Rad\W049	70.Edd, h:\Rep	ortdb\ed	d\FeadIV\Rad\33199.E	Edd
9H9TPK10	B1JK37	A STATE OF THE STA	MW6-SBB-A1	A06-007	W04970)				1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	311111111111111111111111111111111111111	07/21/2	006 09:20	
Batch 6207523	Analyte H-3	CAS# 10028-17-8	Result 1.92E+03	Unit pCi/L	CntU 2S 1.8E+02	TotU 2S 2.2E+02	Qual	MDA 2.84E+0	TrcYield 2 100.0	Method 906.0_H3_LSC	Alq Size 5.00E-03	Unit L	Analy Date/Time 08/02/2006 02:16	Act
6207520	I-129L	15046-84-1	-2.96E-02	pCi/L	1.5E-01	1.5E-01	U	2.79E-01	83.8	I129LL_SEP_LEPS	3.9137E+00	L	08/30/2006 13:12	1
6207522	TC-99	14133-76-7	1.83E+02	pCi/L	8.4E+00	1.8E+01		9.93E+0	0 100.0	TC99_ETVDSK_LS	1.25E-01	L	08/06/2006 04:29	1
6207510	Uranium	7440-61-1	9.52E+00	ug/L	1.1E+00	1.1E+00		8.55E-02	2	UTOT_KPA	2.45E-02	ML	08/18/2006 11:18	i 1
Lab Sample Id: 9H9WL410	Client Id: B1J8L9	Test User	Contract Nbr MW6-SBB-A1	SAF Nb S06-006	or Sdg Nbr: W04970	QC Type		Moisture/ Solids%*:	Distilled Volume	Sample On Date:		E	lection Date: 006 12:12	
Batch	Analyte	CAS#	Result	Unit	CntU 2S	TotU 2S	Qual	MDA	TrcYield	Method	Alq Size	Unit	Analy Date/Time	Act
6207510	Uranium	7440-61-1	3.74E+01	ug/L	4.4E+00	4.4E+00		8.55E-02	2	UTOT_KPA	2.45E-02	ML	08/18/2006 11:24	1
Lab Sample Id: 9H9WM510		Test User	Contract Nbr MW6-SBB-A1	SAF Nb	Nbr:	QC Type		Moisture/ Solids%*:	Distilled Volume	Sample On Date:			lection Date: 1006 13:09	
Batch	Analyte	CAS#	Result		CntU 2S	TotU 2S	Qual	MDA	TrcYield	Method	Alq Size	Unit	Analy Date/Time	Act
6207510	Uranium	7440-61-1	5.42E+01	ug/L	6.4E+00	6.4E+00	Guu	8.42E-02		UTOT_KPA	2.49E-02	ML		
Lab Sample Id: 9H9WMV10		Test User	Contract Nbr MW6-SBB-A1	SAF N b	Nbr:	QC Type		Moisture/ Solids%*:	Distilled Volume	Sample On Date:			lection Date: 2006 10:48	
Batch	Analyte	CAS#	Result		CntU 2S	TotU 2S	Qual	MDA	TrcYield	Method	Alq Size	Unit	Analy Date/Time	Act
6207510	Uranium	7440-61-1	1.48E-02	ug/L	1.6E-03	1.6E-03	U	8.35E-02	2	UTOT_KPA	2.51E-02	ML	-	; l
Lab Sample Id: 9H9WW010		Test User	Contract Nbr MW6-SBB-A1	SAF Nb	or Sdg Nbr: W04970	21		Moisture/ Solids%*:	Distilled Volume	•		[lection Date: 2006 10:59	
Batch	Analyte	CAS#	Result	Unit	CntU 2S	TotU 2S	Qua	I MDA	TrcYield	Method	Alq Size	Unit	Analy Date/Time	Act
6207523	H-3	10028-17-8	7.68E+02	pCi/L	1.5E+02	1.6E+02		2.86E+0	2 100.0	906.0_H3_LSC	5.00E-03	L	08/02/2006 04:59) i
6207520	l-129L	15046-84-1	-6.11E-02	pCi/L	1.3E-01	1.3E-01	U	2.25E-0	1 88.6	I129LL_SEP_LEPS	3.9221E+00	L	08/30/2006 13:13	3 1
6207525	SR-90	10098-97-2	2.04E-01	pCi/L	1.6E-01	1.8E-01	U	3.61E-0	1 87.3	SRISO_SEP_PRE	1.0006E+00	L	09/07/2006 06:57	7 1
6207522	TC-99	14133-76-7	6.79E+01	pCi/L	6.1E+00	1.1E+01		9.89E+0	0 100.0	TC99_ETVDSK_LS	1.25E-01	L	08/06/2006 04:30)
Lab Sample Id:		Test User	Contract Nbr	SAF NE	Nbr:			Moisture/ Solids%*:	Distilled Volume	•		I	lection Date: 2006 11:46	
9H9WW510		0.40"	MW6-SBB-A1		W04970		O	I MDA	TrcYield	Method	Alq Size	07/24/2 Unit	Analy Date/Time	Act
Batch 6207523	Analyte H-3	CAS # 10028-17-8	Result 1.51E+03	Unit pCi/L	CntU 2S 1.7E+02	TotU 2S 2.0E+02	Qua	I MDA 2.86E+0		906.0_H3_LSC	5.00E-03	L	08/02/2006 06:21	

STL Richland

U Qual - Analyzed for, but the result is less than the Mdc or gamma scan did not identify the nuclide.

J Qual - No U qualifier has been assigned and the result is below the Reporting Limit (CRDL).

B Qual- Analyte was found in the associated laboratory blank above the MDC.

9/7/2006	5 2:29:32 PM		STL Richland Report										
FormNbr: R FormatType: FEAD Version: 05 Rpt Nbr: 33199 File Name: h:\Reportdb\edd\FeadIV\Rad\W04970.Edd, h:\Reportdb								rtdb\edd	d\FeadIV\Rad\33199	9.Edd			
6207520	I-129L	15046-84-1	3.03E-02	pCi/L	1.5E-01	1.5E-01	U	2.80E-01 88.4	I129LL_SEP_LEP	S 3.9472E+00	L	08/30/2006 14:5	56 I
6207522	TC-99	14133-76-7	9.43E+01	pCi/L	6.7E+00	1.2E+01		9.89E+00 100.0	TC99_ETVDSK_L	S 1.25E-01	L	08/06/2006 04:3	30 I
6207510	Uranium	7440-61-1	7.82E-01	ug/L	8.0E-02	8.0E-02		8.48E-02	UTOT_KPA	2.47E-02	ML	08/18/2006 11:4	40 I

 $[\]label{eq:local_equal} \textbf{J Qual} \textbf{-} \textbf{No U qualifier has been assigned and the result is below the Reporting Limit (CRDL)}.$

B Qual- Analyte was found in the associated laboratory blank above the MDC.

STL Richland QC Blank Report

Lab Code: STLRL

FormNbr: R

Moisture/Solids%*:

12587-46-1

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W04970.Edd, h:\Reportdb\edd\FeadIV\Rad\33199.Edd

Lab Sample Id:

H93E31AB

Sdg/Rept Nbr: W04970

33199

Collection Date: 07/25/2006 10:01

Client Id:

NA

Matrix:

QC Type:

WATER

BLK

WATER

Sample On Date:

Received Date:

07/25/2006

SAF Nbr

Contract Nbr MW6-SBB-A19981 **Test User** Case Nbr SAS Nbr

Suffix

Decant

Distilled Volume

File Id

FSuffix RTyp AV

Batch # / Analyt/ Qc Type CAS# 6207513 ALPHA

BLK

Result/ Orig Rst 2.31E-02

Tot/Cnt Unit Uncert 2S pCi/L 1.6E-01

Qual MDC 3.85E-01 U

Tracer Yield 100.0

Spk Conc/ %Rec

Analy Method 9310 ALPHAB

Aliq Size/ 2.003E-01

Date/Time Analyzed 08/16/2006 RPD/ RER/ UCL UCL

LCS R LCL/UCL Typ

Н

D

1.6E-01

15:25

STL Richland QC Blank Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W04970.Edd, h:\Reportdb\edd\FeadIV\Rad\33199.Edd

Lab Sample Id:

H93E61AB

Sdg/Rept Nbr: W04970

33199

Collection Date: 07/25/2006 09:15

Client Id:

NA

Matrix:

WATER

WATER

Sample On Date:

Moisture/Solids%*:

Analyt/

CAS#

QC Type:

Case Nbr

BLK

Received Date:

07/25/2006

SAF Nbr

Contract Nbr

Test User

SAS Nbr

Suffix

Decant

Distilled Volume

File Id

FSuffix RTyp AX

Batch # /

Qc Type

MW6-SBB-A19981

Result/

Orig Rst

2.13E+00

Tot/Cnt Unit Uncert 2S

pCi/L 1.0E+00

Qual MDC

Tracer Yield

Spk Conc/ %Rec

Analy Method

Aliq Size/

Date/Time Analyzed UCL 08/15/2006

LCS RPD/ RER/ LCL/UCL Typ UCL

Н

R

6207517 **BETA** 12587-47-2 BLK

1.0E+00

1.83E+00

100.0

9310_ALPHAB 2.028E-01

D

09:56

STL Richland QC Blank Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W04970.Edd, h:\Reportdb\edd\FeadIV\Rad\33199.Edd

Lab Sample Id:

H93EQ1AB

Sdg/Rept Nbr: W04970

33199

Collection Date: 07/24/2006 13:09

Client Id:

NA

Matrix:

WATER

WATER

Sample On Date: **Received Date:**

07/24/2006

Moisture/Solids%*:

QC Type: **BLK**

Decant

SAF Nbr

Contract Nbr MW6-SBB-A19981 **Test User**

Case Nbr

SAS Nbr

Suffix

Distilled Volume

File Id

FSuffix RTyp ΑZ

Batch # / Qc Type

6207510

BLK

Analyt/ CAS# Uranium

7440-61-1

Result/ **Orig Rst** 7.35E-03

Tot/Cnt **Uncert 2S** Unit 8.2E-04 ug/L 8.2E-04

Qual MDC 8.45E-02 U

Tracer Yield

Spk Conc/ %Rec

Analy Method UTOT KPA

Aliq Size/ 2.48E-02

Analyzed 08/18/2006

Date/Time RPD/ UCL

RER/ UCL

LCS R LCL/UCL Typ

Н

D

11:08

ML

STL Richland QC Blank Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W04970.Edd, h:\Reportdb\edd\FeadIV\Rad\33199.Edd

Lab Sample Id:

H93EX1AB

Sdg/Rept Nbr: W04970

33199

Collection Date: 07/25/2006 10:01

Client Id:

NA

Matrix:

WATER

WATER

Sample On Date:

Moisture/Solids%*:

QC Type:

BLK

Received Date:

07/25/2006

SAF		ontract Nbr 6-SBB-A19981	Т	est User	Case	Nbr S	AS Nbr	Suffix	Decant	Distilled Volume	File	e Id		FSuffix F BC	Р Н
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UC	R L Typ
6207512 BLK	U-234 13966-29-5	1.69E-02	pCi/L	6.6E-02 6.6E-02	U	1.93E-01	93.4		UISO_PLATE	2.033E-01 L	08/17/2006 10:56				D
6207512 BLK	U-235 15117-96-1	-7.79E-03	pCi/L	9.1E-03 9.0E-03	U	1.62E-01	93.4		UISO_PLATE	2.033E-01 L	08/17/2006 10:56				D
6207512 BLK	U-238 U-238	-1.30E-02	pCi/L	1.2E-02 1.2E-02	U	1.83E-01	93.4		UISO_PLATE	2.033E-01 L	08/17/2006 10:56				D

U Qual - Analyzed for, but the result is less than the Mdc or gamma scan did not identify the nuclide.

J Qual - No U qualifier has been assigned and the result is below the Reporting Limit (CRDL).

Thursday, September 07, 2006 STL Richland QC Blank Report Lab Code: STLRL

FormNbr: R FormatType: FEAD VersionNbr: 05 File Name: h:\Reportdb\edd\FeadIV\Rad\W04970.Edd, h:\Reportdb\edd\W04970.Edd, h:

Lab Sample Id: H93F11AB **Sdg/Rept Nbr:** W04970 33199 **Collection Date:** 07/25/2006 08:50

Client Id: NA Matrix: WATER WATER Sample On Date:

Moisture/Solids%*: QC Type: BLK Received Date: 07/25/2006

Distilled Volume File Id FSuffix RTyp **Test User** SAS Nbr Suffix SAF Nbr Contract Nbr Case Nbr Decant BE Н MW6-SBB-A19981 LCS Result/ Tot/Cnt Qu-Tracer Spk Conc/ Analy Aliq Date/Time RPD/ RER/ R Batch # / Analyt/ %Rec Method Size/ Analyzed UCL UCL LCL/UCL Typ Qc Type CAS# **Orig Rst** Unit Uncert 2S al MDC Yield D 3.02E+02 100.0 906.0 H3 LSC 5.00E-03 08/02/2006 6207523 H-3 1.30E+02 pCi/L 1.4E+02 10028-17-8 1.3E+02 11:49 BLK

Thursday, September 07, 2006 STL Richland QC Blank Report Lab Code: STLRL

FormNbr: R FormatType: FEAD VersionNbr: 05 File Name: h:\Reportdb\edd\Fead\V\Aad\W04970.Edd, h:\Reportdb\edd\Fead\V\Rad\33199.Edd

Lab Sample Id: H93F11DX **Sdg/Rept Nbr**: W04970 33199 **Collection Date**: 07/25/2006 08:50

Client Id: NA Matrix: WATER WATER Sample On Date:

Moisture/Solids%*: QC Type: BLK Received Date: 07/25/2006

SAS Nbr Suffix FSuffix RTyp Contract Nbr Test User Case Nbr **Distilled Volume** File Id SAF Nbr Decant MW6-SBB-A19981 BG Н Batch # / Analyt/ Result/ Tot/Cnt Qu-Tracer Spk Conc/ Analy Aliq Date/Time RPD/ RER/ LCS LCL/UCL Typ MDC Yield %Rec Method UCL UCL Qc Type CAS# Orig Rst Unit Uncert 2S al Size/ Analyzed pCi/L 1.3E+02 2.86E+02 100.0 5.00E-03 08/01/2006 D 6207523 H-3 6.86E+01 906.0 H3 LSC BLK 10028-17-8 1.2E+02 L 20:49

Lab Code: STLRL STL Richland QC Blank Report Thursday, September 07, 2006 FormNbr: R FormatType: FEAD VersionNbr: 05 File Name: h:\Reportdb\edd\FeadIV\Rad\W04970.Edd, h:\Reportdb\edd\FeadIV\Rad\33199.Edd Sdg/Rept Nbr: W04970 Lab Sample Id: H93F31AB 33199 Collection Date: 07/24/2006 10:59 **WATER** WATER NA Matrix: Sample On Date: Client Id: Moisture/Solids%*: QC Type: 07/24/2006 **BLK Received Date:** SAF Nbr Contract Nbr Test User Case Nbr SAS Nbr Suffix Decant **Distilled Volume** File Id FSuffix RTyp ВΙ Η MW6-SBB-A19981 Spk Conc/ Aliq Date/Time RER/ LCS Batch # / Analyt/ Result/ Tot/Cnt Qu-Tracer Analy RPD/ %Rec Method UCL LCL/UCL Typ **Orig Rst** MDC Yield Size/ Analyzed UCL Qc Type CAS# Unit Uncert 2S al D 1.76E-01 pCi/L 2.0E-01 4.07E-01 81.2 SRISO SEP P 9.999E-01 09/07/2006 6207525 SR-90 U

L

06:57

BLK

10098-97-2

1.9E-01

STL Richland QC Blank Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W04970.Edd, h:\Reportdb\edd\FeadIV\Rad\33199.Edd

Lab Sample Id:

H93FA1AB

Sdg/Rept Nbr: W04970

33199

Collection Date: 07/25/2006 09:15

Client Id:

NA

Matrix:

WATER

WATER

Sample On Date:

Moisture/Solids%*:

QC Type: BLK

Received Date: 07/25/2006

SAFI		Contract Nbr MW6-SBB-A19981				Test User		Nbr S	SAS Nbr Suffix		Decant Distilled Volume		File Id		FSuffix RTyp BK H		
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCL	R Typ		
6207518	BE-7	1.65E+00	pCi/L	1.9E+01	U	3.53E+0	1		GAMMALL_G	1.9997E+00	08/09/2006)		
BLK	13966-02-	4	·	1.9E+01						L	16:15						
6207518	CO-60	-1.66E+00	pCi/L	2.5E+00	U	4.20E+0)		GAMMALL_G	5 1.9997E+00	08/09/2006)		
BLK	10198-40-	0		2.5E+00						L	16:15						
6207518	CS-134	-2.80E-01	pCi/L	3.0E+00	U	5.47E+0)		GAMMALL_G	5 1.9997E+00	08/09/2006)		
BLK	13967-70-	9		3.0E+00						L	16:15						
6207518	CS-137	-2.70E+00	pCi/L	2.0E+00	U	2.81E+0)		GAMMALL_G	3 1.9997E+00	08/09/2006)		
BLK	10045-97-	3		2.0E+00						L	16:15						
6207518	EU-152	5.06E+00	pCi/L	5.4E+00	U	1.09E+0	1		GAMMALL_G	5 1.9997E+00	08/09/2006)		
BLK	14683-23-	9		5.4E+00						L	16:15						
6207518	EU-154	5.86E+00	pCi/L	6.0E+00	U	1.43E+0	1		GAMMALL_G	5 1.9997E+00	08/09/2006)		
BLK	15585-10-	1		6.0E+00						L	16:15						
6207518	EU-155	-1.32E+00	pCi/L	4.2E+00	U	7.31E+0	C		GAMMALL_G	6 1.9997E+00	08/09/2006)		
BLK	14391-16-	3		4.2E+00						L	16:15						
6207518	K-40	2.79E+01	pCi/L	4.5E+01	U	5.45E+0	1		GAMMALL_G	S 1.9997E+00	08/09/2006)		
BLK	13966-00-	2		4.5E+01						L	16:15						
6207518	RU-106	-9.95E+00	pCi/L	1.6E+01	U	2.73E+0	1		GAMMALL_G	S 1.9997E+00	08/09/2006)		
BLK	13967-48-	1		1.6E+01						L	16:15						
6207518	SB-125	-8.30E-01	pCi/L	5.4E+00	U	9.63E+0	0		GAMMALL_G	5 1.9997E+00	08/09/2006)		
BLK	14234-35-	-6		5.4E+00						L	16:15						

U Qual - Analyzed for, but the result is less than the Mdc or gamma scan did not identify the nuclide.

J Qual - No U qualifier has been assigned and the result is below the Reporting Limit (CRDL).

B Qual- Analyte was found in the associated laboratory blank above the MDC.

Thursday, September 07, 2006 STL Richland QC Blank Report Lab Code: STLRL

FormNbr: R FormatType: FEAD VersionNbr: 05 File Name: h:\Reportdb\edd\FeadIV\Rad\W04970.Edd, h:\Reportdb\edd\FeadIV\Rad\W33199.Edd

Lab Sample Id: H93FK1AB **Sdg/Rept Nbr:** W04970 33199 **Collection Date:** 07/21/2006 10:29

Client Id: NA Matrix: WATER WATER Sample On Date:

Moisture/Solids%*: QC Type: BLK Received Date: 07/21/2006

Suffix **Distilled Volume** SAF Nbr **Contract Nbr** Test User Case Nbr SAS Nbr Decant File Id FSuffix RTyp ВМ Н MW6-SBB-A19981 Date/Time RER/ LCS Tot/Cnt Tracer Spk Conc/ Analy Aliq RPD/ Batch # / Analyt/ Result/ Qu-

LCL/UCL Typ Method UCL UCL Qc Type CAS# Orig Rst Unit Uncert 2S al MDC Yield %Rec Size/ Analyzed 3.06E-01 82.2 1129LL_SEP_L 3.9052E+00 08/30/2006 D 6207520 I-129L 5.67E-02 pCi/L 1.6E-01

BLK 15046-84-1 1.6E-01 L 17:04

R

J Qual - No U qualifier has been assigned and the result is below the Reporting Limit (CRDL).

STL Richland QC Blank Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W04970.Edd, h:\Reportdb\edd\FeadIV\Rad\33199.Edd

Lab Sample Id:

H93FX1AB

Sdg/Rept Nbr: W04970

33199

Collection Date: 07/21/2006 09:20

Client Id:

NA

Matrix:

WATER

WATER

Sample On Date:

Moisture/Solids%*:

QC Type:

BLK

Received Date:

07/21/2006

SAF Nbr

Batch # /

Qc Type

Contract Nbr

Test User Case Nbr SAS Nbr

Tracer

Suffix

Decant

Distilled Volume

File Id

FSuffix RTyp ВО Н

MW6-SBB-A19981

Analyt/ CAS#

Result/ **Orig Rst** -5.21E-01

Unit pCi/L 6.1E+00

Tot/Cnt Uncert 2S

Qual U

MDC Yield 9.90E+00 100.0

Spk Conc/ %Rec

Analy Method TC99_ETVDSK 1.25E-01

Aliq Size/

Date/Time Analyzed 08/06/2006

RER/ RPD/ UCL UCL

LCS LCL/UCL Typ

R

D

04:30

6207522 TC-99 14133-76-7 BLK

4.1E+00

STL Richland

STL Richland QC Control Sample Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W04970.Edd, h:\Reportdb\edd\FeadIV\Rad\33199.Edd

Lab Sample Id:

H93E31CS

Sdg/Rept Nbr: W04970

33199

Collection Date: 07/25/2006 10:01

Client Id:

NA

Matrix:

WATER

WATER

Sample On Date:

Moisture/Solids%*:

QC Type:

BS

Received Date: 07/25/2006

SAF Nbr

Contract Nbr MW6-SBB-A19981 Test User Case Nbr SAS Nbr

Suffix

Decant

Distilled Volume

File Id

FSuffix RTyp

Н

R

ΑW

Batch # /

Qc Type

BS

Analyt/ CAS# 6207513 ALPHA

12587-46-1

Result/ **Orig Rst** 2.03E+01

Tot/Cnt Uncert 2S Unit pCi/L 4.3E+00 1.5E+00

Qu-MDC al 4.13E-01

Tracer Yield 100.0

%Rec 2.28E+01 89.2

Spk Conc/

Analy Aliq Method 9310_ALPHAB

Size/ 2.003E-01 L

Date/Time UCL Analyzed 08/16/2006 15:25

RPD/ RER/ LCS UCL

LCL/UCL Typ 70 D

130

STL Richland rptFeadRadEdd v3.68

STL Richland QC Control Sample Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W04970.Edd, h:\Reportdb\edd\FeadIV\Rad\33199.Edd

Lab Sample Id:

H93E61CS

Sdg/Rept Nbr: W04970

33199

Collection Date: 07/25/2006 09:15

Client Id:

NA

Matrix:

WATER

WATER

Sample On Date:

Moisture/Solids%*:

QC Type:

BS

Received Date:

07/25/2006

SAF	Nbr Co	ntract Nbr	Т	est User	Case	Nbr SA	AS Nbr	Suffix	Decant	Distilled Volume	File	e Id	FSuffix RTyp			
	MW6	S-SBB-A19981												AY	Н	
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UC	R CL Typ	
6207517	BETA	2.24E+01	pCi/L	4.7E+00		1.61E+00	100.0	2.28E+01	9310_ALPHAE	3 2.003E-01	08/15/2006			70	D	
BS	12587-47-2			1.6E+00				98.1		L	09:56			130		

STL Richland QC Control Sample Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W04970.Edd, h:\Reportdb\edd\FeadIV\Rad\33199.Edd

Lab Sample Id:

H93EQ1CS

Sdg/Rept Nbr: W04970

33199

Collection Date: 07/24/2006 13:09

Client Id:

NA

Matrix:

WATER

WATER

Sample On Date:

Moisture/Solids%*:

QC Type:

BS

Received Date: 07/24/2006

SAF Nbr		Contract Nbr MW6-SBB-A19981		Test User		Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id			FSuffix BA	RTyp H
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/U	R CL Typ
6207510 BS	Uranium 7440-61-	3.58E+01 1	ug/L	4.2E+00 4.2E+00		8.42E-0)2	3.62E+01 98.8	UTOT_KPA	2.49E-02 ML	08/18/2006 11:12			70 130	D

STL Richland QC Control Sample Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W04970.Edd, h:\Reportdb\edd\FeadIV\Rad\33199.Edd

Lab Sample Id:

H93EQ1DS

Sdg/Rept Nbr: W04970

33199

Collection Date: 07/24/2006 13:09

Client Id:

NA

QC Type:

WATER

WATER

Sample On Date:

Moisture/Solids%*:

Matrix:

Received Date:

07/24/2006

SAF Nbr

Contract Nbr MW6-SBB-A19981 Case Nbr

BS SAS Nbr

Suffix

Distilled Volume Decant

File Id

FSuffix RTvp BB Н

R

Batch # / Analyt/ Qc Type CAS# 6207510 Uranium

Result/ Orig Rst 3.56E+00

Tot/Cnt **Uncert 2S** Unit ug/L 3.6E-01

Qual

Tracer MDC Yield 8.42E-02

Spk Conc/ %Rec 3.64E+00

Analy Method UTOT KPA

Aliq Size/ 2.49E-02

Date/Time Analyzed 08/18/2006 11:14

RPD/ RER/ UCL UCL

LCS LCL/UCL Typ 70 D

7440-61-1 BS

3.6E-01

Test User

98.0

ML

130

STL Richland rptFeadRadEdd v3.68 U Qual - Analyzed for, but the result is less than the Mdc or gamma scan did not identify the nuclide.

J Qual - No U qualifier has been assigned and the result is below the Reporting Limit (CRDL).

B Qual- Analyte was found in the associated laboratory blank above the MDC.

STL Richland QC Control Sample Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W04970.Edd, h:\Reportdb\edd\FeadIV\Rad\33199.Edd

Lab Sample Id:

H93EX1CS

Sdg/Rept Nbr: W04970

33199

Collection Date: 07/25/2006 10:01

Client Id:

NA

Matrix:

WATER

WATER

Sample On Date:

07/25/2006

Moisture/Solids%*:

QC Type:

BS

Received Date:

SAF	Nbr Cor	Contract Nbr				est User	Case Nbr S		AS Nbr	Suffix	Decant	Distilled Volume	File Id		FSuffix RTyp			
	MW6	-SBB-A19981												BD	Н			
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UC	R L Typ			
6207512 BS	U-234 13966-29-5	7.99E+00	pCi/L	1.8E+00 1.3E+00		2.95E-01	87.4	8.74E+00 91.5	UISO_PLATE	_ 2.001E-01 L	08/17/2006 10:57			70 130	D			
6207512 BS	U-238 U-238	8.81E+00	pCi/L	1.9E+00 1.3E+00		2.28E-01	87.4	9.15E+00 96.2	UISO_PLATE	_ 2.001E-01 L	08/17/2006 10:57			70 130	D			

STL Richland QC Control Sample Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W04970.Edd, h:\Reportdb\edd\FeadIV\Rad\33199.Edd

Lab Sample Id:

H93F11CS

Sda/Rept Nbr: W04970

33199

Collection Date: 07/25/2006 08:50

Client Id:

NA

Matrix:

MDC

WATER

WATER

Sample On Date:

07/25/2006

Moisture/Solids%*:

QC Type: BS

Received Date:

FSuffix RTyp

Н

SAF Nbr

Contract Nbr MW6-SBB-A19981 Case Nbr

SAS Nbr

Suffix

Distilled Volume Decant

File Id

BF

Batch # /

Qc Type

Analyt/ Result/ CAS# **Orig Rst** 6207523 H-3 2.59E+03

Tot/Cnt Unit Uncert 2S pCi/L 2.5E+02

Test User

Qual

Tracer Yield 3.02E+02 100.0

Spk Conc/ %Rec 2.72E+03

Analy Method 906.0 H3 LSC

Aliq Date/Time Size/ Analyzed 5.00E-03

RPD/ RER/ UCL UCL

LCS LCL/UCL Typ

70 D

BS 10028-17-8

2.0E+02

95.3

L

08/02/2006 13:10

130

STL Richland QC Control Sample Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W04970.Edd, h:\Reportdb\edd\FeadIV\Rad\\33199.Edd

Lab Sample Id:

H93F11EM

Sdg/Rept Nbr: W04970

33199

Collection Date: 07/25/2006 08:50

Client Id:

BS

NA

Matrix:

WATER

WATER

Sample On Date:

Moisture/Solids%*:

10028-17-8

QC Type: BS

Received Date:

07/25/2006

SAF	Nbr Co			Test User		Nbr SAS Nbr Suffix		Suffix	Decant	Distilled Volume	File	e Id	FSuffix RTyp		
	MW	6-SBB-A19981												ВН	Н
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCI	R L Typ
6207523	H-3	2.47E+03	pCi/L	2.4E+02		2.87E+02	100.0	2.72E+03	906.0_H3_LS	C 5.00E-03	08/01/2006			70	D
BS	10028-17-8			2.0E+02				91.0		L	22:11			130	

STL Richland QC Control Sample Report

Lab Code: STLRL

130

FormNbr: R

FormatType: FEAD

6.0E-01

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W04970.Edd, h:\Reportdb\edd\FeadIV\Rad\33199.Edd

Lab Sample Id:

H93F31CS

Sdg/Rept Nbr: W04970

33199

Collection Date: 07/24/2006 10:59

Client Id:

BS

NA

Matrix:

WATER

WATER

Sample On Date:

Moisture/Solids%*:

10098-97-2

QC Type:

BS

Received Date: 07/24/2006

06:57

SAF		Contract Nbr MW6-SBB-A19981		Test User		Nbr SA	AS Nbr	Suffix	Decant I	Distilled Volume	File Id			FSuffix RT BJ F		
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UC	R L Typ	
6207525	SR-90	1.25E+01	pCi/L	2.0E+00		3.85E-01	89.9	1.38E+01	SRISO_SEP_P	1.0003E+00	09/07/2006			70	D	

90.5

STL Richland QC Control Sample Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W04970.Edd, h:\Reportdb\edd\FeadIV\Rad\33199.Edd

Lab Sample Id:

H93FA1CS

Sdg/Rept Nbr: W04970

33199

Collection Date: 07/25/2006 09:15

Client Id:

NA

Matrix:

WATER

WATER

Sample On Date:

DC

Descived Date: 07/25/2006

Mois	Moisture/Solids%*:				QC Type: BS				Received Date: 07/25/2006								
SAF		Contract Nbr MW6-SBB-A19981				Test User		Nbr S	AS Nbr	Suffix	Decant	Distilled Volume	File	e Id	FSuffix RTy BL H		RTyp H
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UC	R L Typ		
6207518 BS	CO-60 10198-40-0	3.85E+01	pCi/L	8.8E+00 8.8E+00		4.99E+00)	3.80E+01 101.3	GAMMALL_G	S 2.0026E+00 L	08/09/2006 16:15			70 130	D		
6207518 BS	CS-137 10045-97-3	2.17E+01	pCi/L	6.0E+00 6.0E+00		4.43E+00)	2.49E+01 86.9	GAMMALL_G	S 2.0026E+00 L	08/09/2006 16:15			70 130	D		
6207518 BS	EU-152 14683-23-9	7.90E+01	pCi/L	1.7E+01 1.7E+01	U	2.62E+01		7.66E+01 103.1	GAMMALL_G	S 2.0026E+00 L	08/09/2006 16:15			70 130	D		

STL Richland QC Control Sample Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W04970.Edd, h:\Reportdb\edd\FeadIV\Rad\33199.Edd

Lab Sample Id:

H93FK1CS

Sdg/Rept Nbr: W04970

33199

Collection Date: 07/21/2006 10:29

Client Id:

NA

Matrix:

WATER

WATER

Sample On Date:

Moisture/Solids%*:

Analyt/

CAS#

QC Type:

BS

Received Date:

07/21/2006

SAF Nbr

Contract Nbr

Test User Case Nbr SAS Nbr

Suffix

Decant

Distilled Volume

File Id

FSuffix RTyp BN Н

MW6-SBB-A19981 Result/

Orig Rst

7.78E+00

Tot/Cnt

Qu-Uncert 2S al

Tracer MDC Yield 88.5

Spk Conc/ %Rec

Analy Method Aliq Size/

Date/Time Analyzed

RER/ RPD/ UCL UCL

LCS

Qc Type 6207520 I-129L BS

Batch # /

15046-84-1

Unit pCi/L 1.1E+00 1.1E+00

4.29E-01

I129LL_SEP_L

3.9178E+00 08/30/2006 L

LCL/UCL Typ D

17:05

STL Richland QC Control Sample Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W04970.Edd, h:\Reportdb\edd\FeadIV\Rad\33199.Edd

Lab Sample Id:

H93FX1CS

Sdg/Rept Nbr: W04970

33199

Collection Date: 07/21/2006 09:20

Client Id:

NA

Matrix:

WATER

WATER

Sample On Date:

07/21/2006

Moisture/Solids%*:

QC Type:

BS

Received Date:

SAF Nbr

Contract Nbr MW6-SBB-A19981 **Test User**

Case Nbr

SAS Nbr

Suffix Decant **Distilled Volume**

File Id

FSuffix RTyp ΒP Н

Batch # / Qc Type

Analyt/ Result/ CAS# Orig Rst 5.21E+02

Tot/Cnt Unit Uncert 2S pCi/L 4.1E+01

Qu-Tracer MDC al 9.99E+00 100.0

Spk Conc/ Yield %Rec 5.41E+02

Analy Aliq Method Size/ TC99_ETVDSK 1.25E-01

Date/Time Analyzed 08/06/2006 RPD/ RER/ UCL UCL

LCS LCL/UCL Typ 70 D

6207522 TC-99 14133-76-7 BS

1.3E+01

96.2

04:30

130

STL Richland QC Duplicate Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W04970.Edd, h:\Reportdb\edd\FeadIV\Rad\33199.Edd

Lab Sample Id:

H90121HR

Sdg/Rept Nbr: W04970

33199

Collection Date: 07/25/2006 10:01

RER/

Client Id:

B1JLD2

Matrix:

WATER

WATER

Sample On Date:

07/25/2006

Moisture/Solids%*:

QC Type:

DUP

Received Date:

FSuffix RTyp

SAF Nbr S06-007

Contract Nbr MW6-SBB-A19981 Case Nbr

Qu-

al

U

SAS Nbr

Suffix

Decant

Distilled Volume

File Id

RPD/

AQ Н

D

R

Batch # / Qc Type

Analyt/ CAS#

Result/ Orig Rst -1.17E-01

Tot/Cnt Unit **Uncert 2S** pCi/L 8.4E-01

Test User

Yield MDC 2.03E+00 100.0

Spk Conc/ Tracer %Rec

Analy Method 9310 ALPHAB

Aliq Size/ 5.61E-02

Analyzed 08/16/2006 UCL UCL 253.8 1.9

LCS LCL/UCL Typ

3 15:25 20.0

Date/Time

STL Richland QC Duplicate Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W04970.Edd, h:\Reportdb\edd\FeadIV\Rad\33199.Edd

Lab Sample Id:

H901Q1HR

Sdg/Rept Nbr: W04970

33199

Collection Date: 07/25/2006 10:01

Client Id:

B1JLD3

Matrix:

WATER

WATER

Sample On Date:

Moisture/Solids%*:

QC Type: DU₽

Received Date: 07/25/2006

SAF Nbr Contract Nbr **Test User** Case Nbr SAS Nbr Suffix Decant **Distilled Volume** File Id FSuffix RTyp

S06-0	07 MW6	S-SBB-A19981												AR H
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS R LCL/UCL Typ
6207512	U-234	5.10E-02	pCi/L	9.2E-02	U	1.80E-01	96.5		UISO_PLATE_	1.993E-01	08/17/2006	43.6	0.3	D
DUP	13966-29-5	3.28E-02		9.2E-02						L	10:54	20.0	3	
6207512	U-235	0.00E+00	pCi/L	7.8E-02	U	8.64E-02	96.5		UISO_PLATE_	1.993E-01	08/17/2006	200.0	0.4	D
DUP	15117 - 96-1	1.97E-02		7.8E-02						L	10:54	20.0	3	
6207512	U-238	0.00E+00	pCi/L	7.8E-02	U	8.64E-02	96.5		UISO_PLATE_	1.993E-01	08/17/2006	200.0	0.4	D
DUP	U-238	1.97E-02		7.8E-02						L	10:54	20.0	3	

STL Richland QC Duplicate Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W04970.Edd, h:\Reportdb\edd\FeadIV\Rad\33199.Edd

Lab Sample Id:

H901Q1JR

Sdg/Rept Nbr: W04970

33199

Collection Date: 07/25/2006 10:01

Client Id:

B1JLD3

Matrix:

WATER

WATER

Sample On Date:

Moisture/Solids%*:

Received Date:

QC Type: DUP

07/25/2006

		20 t)por												
SAF 1		ontract Nbr 6-SBB-A19981	T	est User	Case	Nbr SA	S Nbr	Suffix	Decant D	stilled Volume	File	ld		FSuffix RTyp AS H
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS I
6207518	BE-7	8.84E+00	pCi/L	1.9E+01	U	3.47E+01			GAMMALL_GS	1.9804E+00	08/09/2006	571.0	1.	D
DUP	13966-02-4	-4.25E+00		1.9E+01						L	16:13	20.0	3	
6207518	CO-60	1.07E+00	pCi/L	2.1E+00	U	4.38E+00			GAMMALL_GS	1.9804E+00	08/09/2006	0.0	1.6	D
DUP	10198-40-0	-1.40E+00		2.1E+00						L	16:13	20.0	3	
6207518	CS-134	-1.07E+00	pCi/L	2.4E+00	U	4.13E+00			GAMMALL_GS	1.9804E+00	08/09/2006	0.0	0.1	D
DUP	13967-70-9	-8.65E-01		2.4E+00						L	16:13	20.0	3	
6207518	CS-137	-1.06E-01	pCi/L	2.3E+00	U	4.06E+00			GAMMALL_GS	1.9804E+00	08/09/2006	490.7	0.2	D
DUP	10045-97-3	2.53E-01		2.3E+00						L	16:13	20.0	3	
6207518	EU-152	-7.63E-01	pCi/L	5.6E+00	U	9.70E+00			GAMMALL_GS	1.9804E+00	08/09/2006	332.1	1.	D
DUP	14683-23-9	3.07E+00		5.6E+00						L	16:13	20.0	3	
6207518	EU-154	3.43E+00	pCi/L	7.9E+00	U	1.52E+01			GAMMALL_GS	1.9804E+00	08/09/2006	1051.6	1.	D
DUP	15585-10-1	-2.34E+00		7.9E+00						L	16:13	20.0	3	
6207518	EU-155	1.53E+00	pCi/L	6.2E+00	U	1.07E+01			GAMMALL_GS	1.9804E+00	08/09/2006	43.2	0.2	D
DUP	14391-16-3	2.38E+00		6.2E+00						L	16:13	20.0	3	
6207518	K-40	-1.13E+02	pCi/L	6.3E+01	U	1.31E+02			GAMMALL_GS	1.9804E+00	08/09/2006	0.0	2.7	D
DUP	13966-00-2	7.99E+00		6.3E+01						L	16:13	20.0	3	
6207518	RU-106	7.92E+00	pCi/L	1.8E+01	U	3.46E+01			GAMMALL_GS	1.9804E+00	08/09/2006	1333.2	1.1	D
DUP	13967-48-1	-5.85E+00		1.8E+01						L	16:13	20.0	3	
6207518	SB-125	-2.51E+00	pCi/L	5.5E+00	U	9.32E+00			GAMMALL_GS	1.9804E+00	08/09/2006	0.0	0.1	D
DUP	14234-35-6	-2.26E+00		5.5E+00						L	16:13	20.0	3	

STL Richland rptFeadRadEdd v3.68

U Qual - Analyzed for, but the result is less than the Mdc or gamma scan did not identify the nuclide.

J Qual - No U qualifier has been assigned and the result is below the Reporting Limit (CRDL).

B Qual- Analyte was found in the associated laboratory blank above the MDC.

STL Richland QC Duplicate Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W04970.Edd, h:\Reportdb\edd\FeadIV\Rad\33199.Edd

Lab Sample Id:

H90221GR

Sdg/Rept Nbr: W04970

33199

Collection Date: 07/25/2006 09:15

Client Id:

B1K2H2

Matrix:

WATER

WATER

Sample On Date:

Moisture/Solids%*:

QC Type:

DUP

Received Date:

07/25/2006

SAF N	lbr Co	ntract Nbr	т	est User	Case	Nhr S	AS Nbr	Suffix	Decant	Distilled Volume	File	e Id		FSuffix R	PTvn
W06-0		S-SBB-A19981	•	est USEI	Case	INDI S	HOI CA	Sullix	Decant	Distilled Volume	1 110	iu		AT	Н
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCI	R L Typ
6207517	BETA	1.04E+04	pCi/L	1.3E+03		3.18E+01	100.0		9310_ALPHAI	3 1.27E-02	08/15/2006	3.0	0.3		D
מווח	12587-47-2	1.07F+04	-	1 4F+02						1	09:56	20.0	3		

STL Richland QC Duplicate Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W04970.Edd, h:\Reportdb\edd\FeadIV\Rad\33199.Edd

Lab Sample Id:

H903K1CR

Sdg/Rept Nbr: W04970

33199

Collection Date: 07/25/2006 08:50

Client Id:

B1JLC7

Matrix:

WATER

WATER

Sample On Date:

Moisture/Solids%*:

QC Type: DUP

Received Date: 07/25/2006

SAF Nbr S06-007

Contract Nbr MW6-SBB-A19981 **Test User** Case Nbr SAS Nbr

Suffix

Decant

Distilled Volume

File Id FSuffix RTyp

RER/

Batch # / Qc Type 6207523

DUP

Analyt/ CAS# H-3

10028-17-8

Result/ Orig Rst 3.04E+03 2.79E+03

Tot/Cnt Unit Uncert 2S pCi/L 2.7E+02 2.2E+02

Qu-

al

Tracer MDC Yield 3.02E+02 100.0

Spk Conc/ %Rec

Analy Method 906.0 H3 LSC 5.00E-03

Aliq Size/

Date/Time RPD/ Analyzed 08/02/2006

UCL UCL 1.3 8.6

LCS

ΑU

R LCL/UCL Typ

Η

D

14:32 20.0 3

STL Richland

U Qual - Analyzed for, but the result is less than the Mdc or gamma scan did not identify the nuclide. J Qual - No U qualifier has been assigned and the result is below the Reporting Limit (CRDL).

B Qual- Analyte was found in the associated laboratory blank above the MDC.

STL Richland QC Duplicate Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

1.5E-01

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W04970.Edd, h:\Reportdb\edd\FeadIV\Rad\33199.Edd

L

Lab Sample Id:

H9TN21DR

Sdg/Rept Nbr: W04970

33199

Collection Date: 07/21/2006 10:29

3

Client Id:

DUP

B1JK36

1.01E-01

Matrix:

WATER

WATER

Sample On Date:

Moisture/Solids%*:

15046-84-1

QC Type:

DUP

Received Date:

11:28

07/21/2006

20.0

SAF	SAF Nbr Contract Nbr		SAF Nbr Contract Nbr		T	est User	Case	Nbr S	AS Nbr	Suffix	Decant D	istilled Volume	File	ld		FSuffix R	Тур
A06-00)7 MV	W6-SBB-A19981												BQ	Н		
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCI	R - Typ		
6207520	I-129L	6.54E-02	pCi/L	1.5E-01	U	2.98E-01	86.5		I129LL_SEP_L	3.9264E+00	08/30/2006	43.3	0.3		D		

STL Richland QC Duplicate Report

Lab Code: STLRL

FormNbr: R

Moisture/Solids%*:

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W04970.Edd, h:\Reportdb\edd\FeadIV\Rad\33199.Edd

Lab Sample Id:

H9TPK1FR

Sdg/Rept Nbr: W04970

33199

Collection Date: 07/21/2006 09:20

Client Id:

B1JK37

Matrix:

WATER

WATER

Sample On Date: **Received Date:**

07/21/2006

SAF Nbr

Contract Nbr

QC Type: Case Nbr

DUP

FSuffix RTyp

A06-007

MW6-SBB-A19981

SAS Nbr

Suffix

Decant

Distilled Volume

File Id

RPD/

BS Н

R

Batch # / Qc Type 6207522

Analyt/ CAS# TC-99

Result/ **Orig Rst** 1.74E+02

Tot/Cnt Unit Uncert 2S pCi/L 1.8E+01 8.3E+00

Test User

Qu-Tracer al MDC Yield 9.95E+00 100.0

Spk Conc/ %Rec

Analy Aliq Method Size/ TC99 ETVDSK 1.25E-01

Date/Time

Analyzed 08/06/2006

RER/ UCL UCL 4.9 0.7

LCS LCL/UCL Typ D

14133-76-7 DUP

1.83E+02

04:29

20.0 3

STL Richland rptFeadRadEdd v3.68

U Qual - Analyzed for, but the result is less than the Mdc or gamma scan did not identify the nuclide.

STL Richland QC Duplicate Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W04970.Edd, h:\Reportdb\edd\FeadIV\Rad\33199.Edd

Lab Sample Id:

H9WM51CR

Sdg/Rept Nbr: W04970

WATER

33199

Collection Date: 07/24/2006 13:09

Client Id:

B1JLH0

Matrix:

WATER

Sample On Date:

Moisture/Solids%*:

QC Type:

DUP

Received Date:

07/24/2006

SAF	Nbr
W06-	007

Contract Nbr MW6-SBB-A19981 Case Nbr

SAS Nbr

Suffix

Decant

Distilled Volume

File Id FSuffix RTyp

Batch # / Qc Type

Analyt/ CAS#

Result/ Orig Rst 5.53E+01

Tot/Cnt Uncert 2S Unit 6.5E+00

Test User

Qual MDC Tracer Yield

Spk Conc/ Analy %Rec Method

Aliq Size/ 2.53E-02

Date/Time Analyzed

BPD/ RER/ UCL 1.9

LCS

BT

R LCL/UCL Typ

Н

6207510 Uranium 7440-61-1 DUP

5.42E+01

6.5E+00

8.28E-02

UTOT KPA

ML

08/18/2006 11:38

UCL 0.2 20.0 3

D

STL Richland QC Duplicate Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W04970.Edd, h:\Reportdb\edd\FeadIV\Rad\33199.Edd

Lab Sample Id:

H9WW01FR

Sdg/Rept Nbr: W04970

33199

Collection Date: 07/24/2006 10:59

Client Id:

B1JKW9

Matrix:

WATER

WATER

Sample On Date:

Moisture/Solids%*:

QC Type:

DUP

Received Date:

07/24/2006

SAF Nbr Contract Nbr 106-049 MW6-SBB-A19981		Test User		Case Nbr SAS Nbr		Suffix	Decant Distilled Volume		File Id		FSuffix RTyp BV H			
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS R LCL/UCL Typ
	SR-90 10098-97-2	6.99E-02 2.04E-01	pCi/L	1.7E-01 1.2E-01	U	3.58E-01	94.9		SRISO_SEP_I	P 9.998E-01 L	09/07/2006 06:57	98.0 20.0	1.1 3	D

STL Richland Qc Matrix Spike Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W04970.Edd, h:\Reportdb\edd\FeadIV\Rad\33199.Edd

Lab Sample Id:

H9TP01FW

Sdg/Rept Nbr: W04970

33199

Collection Date: 07/21/2006 07:45

Client Id:

B1JK38

Matrix:

MDC

WATER

WATER

Sample On Date:

Moisture/Solids%*:

QC Type:

MS

Received Date:

07/21/2006

SAF Nbr

Contract Nbr

Case Nbr

SAS Nbr

Suffix

Decant

Distilled Volume

File Id

FSuffix RTyp BR

A06-007

Batch # /

Qc Type

6207522

MW6-SBB-A19981

Test User

Tot/Cnt Qu-Unit Uncert 2S al

Tracer Yield 9.90E+00 100.0

Spk Conc/ %Rec 3.62E+03

Analy Method

Aliq Size/ TC99_ETVDSK 1.251E-01

Date/Time RPD/ Analyzed UCL 08/06/2006

LCS RER/ UCL LCL/UCL Typ

60 D

Н

R

TC-99 14133-76-7 MS

Result/

Orig Rst

95.1

140

Analyt/

CAS#

04:29

STL Richland Qc Matrix Spike Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W04970.Edd, h:\Reportdb\edd\FeadIV\Rad\33199.Edd

Lab Sample Id:

H9WMV1CW

Sdg/Rept Nbr: W04970

33199

Collection Date: 07/24/2006 10:48

Client Id:

B1JLH3

Matrix:

WATER

WATER

Sample On Date:

Moisture/Solids%*:

QC Type:

MS

Received Date:

07/24/2006

SAF I W06-0	-	Contract Nbr MW6-SBB-A19981				est User	Case Nbr SAS Nbr			Suffix	Decant	Distilled Volume	File Id			FSuffix BU	RTyp H
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/U	R CL Typ		
6207510 MS	Uranium 7440-61-1	3.43E+01	ug/L	4.0E+00 4.0E+00		8.25E-0	2	3.55E+01 96.7	UTOT_KPA	2.54E-02 ML	08/18/2006 11:28			60 140	D		



STL Richland

QAS_RADCALCv4.8.18

Data Review/Verification Checklist BADIOCHEMISTRY First Level Review

8/4/2006 8:22:32 AM

Page 1

RADIOCHEMISTRY, First Level Review Lot No., Due Date: J6G250322,J6G250324,J6G220144,J6G240196,J6G240197; 09/08/2006 Client, Site: 384868; PGW 615HANFORD HANFORD QC Batch No., Method Test: 6207523; RTRITIUM H-3 by LSC SDG, Matrix: W04970; WATER 8.0 Correction Calculation Protocol Used. Yeş No N/A 8.01 The Appropriate Methods Were Used To Analyze the Samples Yeş No N/A 8.02 Final Results Are in the Appropriate Activity Units No N/A Yeş 8.03 Batch Contains the Required QC Appropriate for the Method Yes No N/A 8.04 The Correct Tracer and QC Vials Where Used in the Samples Yeş No N/A 8.05 Sample was Appropriately Traced Before or After Fractionating the Sample Yes No N/A 8.06 At Least the Minimum Sample Volume Was Used Yes No/ N/A Analysis Volume => H9TN21AA 5.00<10.00 H9TPA1AA 5.00<10.00 H9TPK1AA 5.00<10.00 8-14-06 H9TP01AA 5.00<10.00 H9WW01AA 5.00<10.00 H9WW51AA 5.00<10.00 14-4-01 H90221AA 5.00<10.00 H903K1AA 5.00<10.00 H903L1AA 5.00<10.00 H903M1AA 5.00<10.00 Q:VB 8.07 The Correct Count Geometry was Used. Yes No N/A Count Geometry => H93F11AF SVP15/5<>SVP10/10 H93F11AG SVP15/5<>SVP10/10 H93F11AD SVP15/5<>SVP10/10 0 (H93F11AE SVP15/5<>SVP10/10 H9TN21AA SVP15/5<>SVP10/10 8-4.06 H9TPA1AA SVP15/5<>SVP10/10 H9TPK1AA SVP15/5<>SVP10/10 H93F11AH SVP15/5<>SVP10/10 H9TP01AA SVP15/5<>SVP10/10 H9WW01AA SVP15/5<>SVP10/10 H9WW51AA SVP15/5<>SVP10/10 H90221AA SVP15/5<>SVP10/10 H903K1AA SVP15/5<>SVP10/10 H93F11AA SVP15/5<>SVP10/10 H93F11AC SVP15/5<>SVP10/10 H903K1AC SVP15/5<>SVP10/10 H903L1AA SVP15/5<>SVP10/10 H903M1AA SVP15/5<>SVP10/10 Q:VC 8.08 The Sample was Counted for the Minimum Count Time or CRDL was Achieved. No N/A 8.09 Method Blank is within Control Limits. No N/A OK 8.1 Comments: 8.11 Matrix Blank is within Control Limits. No N/A Yes∕ 8.12 Method Blank(s) < QAS Limit Value (No B Flag Necessary). No N/A Yeş 8.13 QAS Specified Duplicate Equation Value within Control Limits. No N/A Yes OK (RPD) 8.14 LCS within Control Limits. Yes No N/A 8.15 MLCS within Control Limits. Yes No N/A $\cap K$ N/A 8.16 MS within Control Limits. Yes No No Matrix Spike Samples (MS) found in Batch!

8.17 Tracer within Control Limits.			
	Yes	No	N/A
No Tracers found in Batch! 8.18 Samples are above Minimum Tracer Yield (No Failed Samples)	Yes	No	N/A
No Tracers found in Batch!	Maria de Caración		V
8.19 Sample Specific MDC <= CRDL. OK	Yes	No	N/A
8.2 Comments:			
8.21 Result < Lc, Activity Not Detected, U Flag.	Yes	No	N/A
No Limit Specified!	103	140	V
8.22 Result < Mdc, Activity Not Detected, U Flag.	Yeş	No	N/A
No Positive Results OK Calc_IDL Not Calculated	W		
8.23 Result <= Action Level, when Defined.	Yeş	No	N/A
OK; No Action Level Found => H-3	W.		
OK; No Callin Level Found => H-3	Vas	NI.	N/A
8.24 Result + 3s >=0, Not Too Negative. OK	Yes	NO	IV/A
8.25 Counting Spectrum are within FWHM Limits.	Yes	No	N/A
No FWHM found in Batch Data! 8.26 Instruments have Current Calibrations.	Yes	Nο	N/Δ
	.00		107
8.27 Correct Count Library Used.	Yes	No	N/A
No Count Library found in Batch Data! 8.28 Instrument Background within Limits at Time of Counting. (Not Applicable to this version. To be developed in later version.)	on tées	No	N/A
8.29 Instrument Check Source within Limits at the Time of Counting. (Not Applicable to this version. To be developed in later	VIP CESS C	D irneg .	N/A
8.3 Comments:			
8.31 Results Blank Subtracted as Appropriate.	Yes	No	N/A
OK	V	×	*************
First Level Review Pany Andlesson Date 8.406			

STL Richland
QAS_RADCALCv4.8.18

Page 2



Data Review Checklist RADIOCHEMISTRY Second Level Review

OC Batch Number:	4107523
QC Daten Number	W04970

Y	Yes (V)	No (V)	N/A (V)
Review Item	100(1)		
A. Sample Analysis			
· · · · · · · · · · · · · · · · · · ·	-		
2. Is the sample Minimum Detectable Activity \ me Contract			
Detection Limit?			
3. Are the correct isotopes reported?	+		
D. OG Complet			
1. Is the Minimum Detectable Activity for the brank result is the		}	
Contract Detection Limit?	1		
2. Does the blank result meet the Contract criteria?	+ /		
3. Is the blank result < the Contract Detection Limit?	1-/		
4. Is the blank result > the Contract Detection Limit but the sample			1
result < the Contract Detection Limit?	1		
5. Is the LCS recovery with contract acceptance criteria?	1 7		
7. Is the LCS Minimum Detectable Activity ≤ the Contract Detection			
Limit?			/
8. Do the MS/MSD results and yields meet acceptance criteria?			
9. Do the duplicate sample results and yields meet acceptance			
criteria?			
C. Other			
1. Are all Nonconformances included and noted?	1		
2. Are all required forms filled out?	+/		
3. Was the correct methodology used?	+		
A Was transcription checked?	+-//		
5. Were all calculations checked at a minimum frequency:	+-//		· ·
6. Were units checked?			

. Tr Clo III out	
. Were units checked?	and the same of th
Comments on any "No" response:	
	and the state of t
And the second s	
	Congression of the Congression o
	·

Second Level Review. Therry C. Clam.

Date: 8-7-06

7/26/2006 4:06:27 P	M		Sample Pr	reparation/A	nalysis		Balance Id:	12445
384868, Pacific North Pacific Northwest Natio		-	Prp/SepRC5007				Pipet #: _	-
	S \ 1	· A ~	ium by Liquid Sc ENT: HANFORD	int			Sep1 DT/Tm Tech:	7-31-560w
AnalyDueDate: 09/0		4 () ()		L Overter HC	E7C74			
Batch: 6207523 SEQ Batch, Test: None	WATER	pCi/L	PIV	I, Quote: HC ,	3/0/1		Sep2 DT/Tm Tech:	
·							Prep Tech:	
Work Order, Lot, Sample DateTime	Total Amt/Unit	Initial Aliquot Amt/Unit	QC Tracer Prep Date	Count Time Min	Detector Id	Count On (24hr) Circ		
1 H9TN2-1-AA								
J6G220144-2-SAMP	1							
07/21/2006 10:29		AmtRec: 20ML,3XLP	#Containers: 4			Scr:	Alpha: 2.43E-03 uCi/Sa	Beta: -1.64E-03 uCi/Sa
2 H9TPA-1-AA								
J6G220144-3-SAMP			4474					
07/21/2006 12:11		AmtRec: 20ML,3XLP	#Containers: 4			Scr:	Alpha: -4.27E-04 uCi/Sa	Beta: 2.84E-04 uCi/Sa
3 H9TPK-1-AA								
J6G220144-4-SAMP								
07/21/2006 09:20		AmtRec: 20ML,2X500t	MLP,LP,2X4LP #Conta	ainers: 6		Scr:	Alpha: -2.36E-03 uCi/Sa	Beta: 7.92E-04 uCi/Sa
4 H9TP0-1-AA								
J6G220144-5-SAMP				**************************************		***************************************		
07/21/2006 07:45		AmtRec: 20ML,2X500I	MLP,LP,2X4LP #Conta	ainers: 6		Scr:	Alpha: -8.56E-05 uCi/Sa	Beta: 4.35E-04 uCi/Sa
5 H9WW0-1-AA								
J6G240196-1-SAMP 								
07/24/2006 10:59		AmtRec: 20ML,500ML	,4XLP,2X4LP #Conta	iners: 8		Scr:	Alpha:	Beta:
6 H9WW5-1-AA								
J6G240197-1-SAMP								
07/24/2006 11:46		AmtRec: 20ML,2X500	ML,LP,2X4LP #Conta	iners: 6		Scr:	Alpha:	Beta:
7 H9022-1-AA	-							
J6G250322-1-SAMP						****		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
07/25/2006 09:15		AmtRec: 20ML,125ML	,250ML,2XLP #Conta	iners: 5		Scr:	Alpha:	Beta:
STL Richland Key Richland Wa.		Final Amt, di - Diluted Amt rence Dt, ec-Enrichment C			ISV -	- Insufficient Volur	me for Analysis	WO Cnt: 7 ICOC v4.8.24

7/26/2006 4:06:28 PM Sample Preparation/Analysis 17445 Balance Id: 384868, Pacific Northwest National Laboratory, AR H-3 Prp/SepRC5007 Pipet #: Pacific Northwest National Lab **S6 Tritium by Liquid Scint** 7-31-000m Sep1 DT/Tm Tech: **5I CLIENT: HANFORD** AnalyDueDate: 09/04/2006 PM, Quote: HC, 57671 Batch: 6207523 WATER pCi/L Sep2 DT/Tm Tech: SEQ Batch, Test: None Prep Tech: Initial Aliquot QC Tracer Count On I Off CR Analyst, Work Order, Lot, Total Count Detector Comments: Amt/Unit Prep Date Time Min ld (24hr) Circle Init/Date Sample DateTime Amt/Unit 8 H903K-1-AA J6G250324-1-SAMP Scr: Beta: 07/25/2006 08:50 AmtRec: 20ML.LP #Containers: 2 Alpha: 9 H903K-1-AC-X J6G250324-1-DUP Scr: Alpha: Beta: 07/25/2006 08:50 AmtRec: 20ML.LP #Containers: 2 10H903L-1-AA J6G250324-2-SAMP Scr: Beta: 07/25/2006 08:31 AmtRec: 20ML.LP #Containers: 2 Alpha: 11H903M-1-AA J6G250324-3-SAMP 07/25/2006 09:08 AmtRec: 20ML,LP #Containers: 2 Scr: Alpha: Beta: 12H93F1-1-AA-B J6G260000-523-BLK Beta: 07/25/2006 08:50 AmtRec: #Containers: 1 Scr: Alpha: 13H93F1-1-AC-C J6G260000-523-LCS Scr: Alpha: Beta: AmtRec: #Containers: 1 07/25/2006 08:50 14H93F1-1-AD-BX J6G260000-523-MBLK Beta: Scr: Alpha: 07/25/2006 08:50

AmtRec:

#Containers: 1

STL Richland Richland Wa.

Key: In - Initial Amt, fi - Final Amt, di - Diluted Amt, s1 - Sep1, s2 - Sep2

pd - Prep Dt, r - Reference Dt, ec-Enrichment Cell, ct-Cocktailed Added

Page 2

ISV - Insufficient Volume for Analysis

WO Cnt: 14

ICOC v4.8.24

7/26/2006 4:06:29 PM				Sample	e Preparation	/Analysis		Balance I	d: 12445 #: h: 7-31-s Coon
				H-3 Prp/SepRC5				Pipet	#:
	00/04/0000			Tritium by Liqui CLIENT: HANFO				Sep1 DT/Tm Tec	h: 7-31-18ah
	e: 09/04/2006			CLICITI. HAIT	/ND				
Batch: 62075 SEQ Batch, Test		ŀ	oCi/L					Sep2 DT/Tm Tec	h:
one Balon, root	. 110110							Prep Tec	h:
Work Order, I	Lot. II T	otal	Initial Aliquot	QC Trace	r Count	Detect		Off CR	Analyst, Comments:
Sample DateT		t/Unit	Amt/Unit	Prep Date		ld	(24hr) Circ		it/Date
15H93F1-1-AE-CN	Л								
J6G260000-523-									
						***************	- uumma		
07/25/2006 08:5			AmtRec:	#Containers: 1			Scr:	Alpha:	Beta:
16H93F1-1-AF-BN	1								
J6G260000-523-									

07/25/2006 08:5	0		AmtRec:	#Containers: 1			Scr:	Alpha:	Beta:
17H93F1-1-AG-BN									
J6G260000-523-								~~~	
			4 .5	" O			0	Alaka	D. de .
07/25/2006 08:5	U		AmtRec:	#Containers: 1	4.		Scr:	Alpha:	Beta:
18H93F1-1-AH-B	m								
J6G260000-523-			· · · · · · · · · · · · · · · · · · ·						
07/25/2006 08:5	CONTROL OF THE PROPERTY OF THE		AmtRec:	#Containers: 1			Scr:	Alpha:	Beta:
	V		Ammec.	#Oomaners. 1			Out.	Aiptia.	Dou.
Comments:						9			
All Clients f	or Batch:			· · · · · · · · · · · · · · · · · · ·					The state of the s
	acific Northwe	est Nationa	l Laboratory	Pacific Nor	thwest National	Lab, HC,	57671		
H9TN21AA-SAMP	Constituent 1	List:							***************************************
н-3	RDL:400	pCi/L	LCL:70	UCL:130 RP	D:20				
H93F11AA-BLK: H-3	RDL:400	pCi/L	LCL:	UCL: RP	D:				
H93F11AC-LCS:									
H-3 H93F11AD-MBLK	RDL:400	pCi/L	LCL:70	UCL:130 RP	D:20				
H-3	RDL:400	pCi/L	LCL:	UCL: RP	D:				
STL Richland	Kev: In - Initia	lAmt fi₋Fir	nal Amt, di - Diluted	Amt. s1 - Sep1. s2	- Sep2 Page 3		ISV - Insufficient Volum	ne for Analysis	WO Cnt: 18
Richland Wa	-		nce Dt. ec-Enrichme					· · · · · · · · · · · · · · · · · · ·	ICOC v4.8.24

pd - Prep Dt, r - Reference Dt, ec-Enrichment Cell, ct-Cocktailed Added

Richland Wa.

7/26/2006 4:06:30 PM

Sample Preparation/Analysis

Balance Id: 12 4215

Pipet #: ______

Sep1 DT/Tm Tech: 7-31-5 Cosm____

AnalyDueDate: 09/04/2006

AR H-3 Prp/SepRC5007 S6 Tritium by Liquid Scint **5I CLIENT: HANFORD**

Batch: 6207523

pCi/L

Sep2 DT/Tm Tech:

SEQ Batch, Test: None

Prep Tech:

									•	
Work Order, Lot, Sample DateTime	Tota Amt/U	- 11	Initial Aliquot Amt/Unit	11	Tracer Date	Count Time Min	Detector Id	Count On Off (24hr) Circle	CR Analyst, Init/Date	Comments:
193F11AE-MLCS:										
H-3 RDL:	:400	pCi/L	LCL:70	UCL:130	RPD:20					
H93F11AF-IBLK:										
H-3 RDL:	:400	pCi/L	LCL:	UCL:	RPD:					
H93F11AG-IBLK:										
	:400	pCi/L	LCL:	UCL:	RPD:					
193F11AH-BLK:										
H-3 RDL:	:4 00	pCi/L	LCL:	UCL:	RPD:					
19TN21AA-SAMP Calc	c Info:									
Uncert Level	(#s).: 2	Decay to	SaDt: Y	Blk Subt.:	N Sc	:i.Not.: Y	ODRs: B			
193F11AA-BLK:										
Uncert Level	(#s).: 2	Decay to	SaDt: Y	Blk Subt.:	N Sc	:i.Not.: Y	ODRs: B			
93F11AC-LCS:										
Uncert Level	(#s).: 2	Decay to	SaDt: Y	Blk Subt.:	N Sc	:i.Not.: Y	ODRs: B			
193F11AD-MBLK:							ODRs: B			
Uncert Level	(#S).: 2	Decay to	Saut: Y	Blk Subt.:	N SC	:i.Not.: Y	ODKS: B			
193F11AE-MLCS:	(#=) - 3	Decay to	CaDt - V	Blk Subt.:	N Co	:i.Not.: Y	ODRs: B			
Uncert Level	(#S).: Z	Decay to	Sabt: I	BIK SUDC.:	IN SC	:1.NOC.: 1	ODRS. B			
Uncert Level	(#e) • 2	Decay to	gant. V	Blk Subt.:	N Sc	ci.Not.: Y	ODRs: B			
H93F11AG-IBLK:	(#B) • • 2	Decay to	Sanc. I	Dir Bube						
Uncert Level	(#e) · 2	Decay to	SaDt: V	Blk Subt.:	N Sc	ci.Not.: Y	ODRs: B			
193F11AH-BLK:	(1127 * * *	2000, 00								
Uncert Level	(#s).: 2	Decay to	SaDt: Y	Blk Subt.:	N Sc	ci.Not.: Y	ODRs: B			
0110010 20101	,	277-1 00								
						Annre	oved By		Date:	
						whore	.ved by			

Page 4

STL Richland Richland Wa.

Key: In - Initial Amt, fi - Final Amt, di - Diluted Amt, s1 - Sep1, s2 - Sep2 pd - Prep Dt, r - Reference Dt, ec-Enrichment Cell, ct-Cocktailed Added ISV - Insufficient Volume for Analysis

WO Cnt: 18 ICOC v4.8.24 8/3/2006 4:24:22 PM

ICOC Fraction Transfer/Status Report ByDate: 8/3/2005, 8/8/2006, Batch: '6207523', User: *ALL Order By DateTimeAccepting

Q Batch Wor	k Ord CurStat	us A	ccepting		Comments
6207523					
AC	CalcC	McDowellD	7/31/2006 8:51	:12	
SC		wagarr	IsBatched	7/26/2006 4:08:34 PM	ICOC_RADCALC v4.8.24
SC		McDowellD	InSep1	7/31/2006 8:51:12 AM	RICH-RC-5007 REVISION 6
SC		McDowellD	Sep1C	7/31/2006 11:05:18 AM	RICH-RC-5007 REVISION 6
SC		BlackCL	InCnt1	7/31/2006 1:20:32 PM	RICH-RD-0001 REVISION 3
SC		BlackCL	CalcC	8/3/2006 7:18:34 AM	RICH-RD-0001 REVISION 3
4 <i>C</i>		McDowellD	7/31/2006 11:0	5:18	
4 <i>C</i>		McDowellD	7/31/2006 1:18	:08 PM	
4 <i>C</i>		BlackCL	7/31/2006 1:20	:32 PM	
AC		BlackCL	8/3/2006 7:18:3	84 AM	

AC: Accepting Entry; SC: Status Change

STL Richland Richland Wa.



Data Review/Verification Checklist RADIOCHEMISTRY, First Level Review

8/16/2006 7:46:42 AM

Lot No., Due Date:

J6G250319,J6G250322; 09/08/2006

Client, Site:

384868; PGW 615HANFORD HANFORD

QC Batch No., Method Test: 6207518; RGAMMA Gamma by GER

SDG, Matrix:

QAS_RADCALCv4.8.18

W04970; WATER

SDG, Watrix.	W04970, WATER			,
1.0 COC 1.1 Is the ICOC page comp	plete; includes all applicable analysis, dates, SOP numbers, and revisions?	Yes	No	N/A
2.0 QC Batch		 V		
2.1 Do the Summary/Detai	iled Reports include a calculated result for each sample listed on the QC Batch Sheet?	Yes	No	N/A
2.2 Are the QC appropriate	e for the analysis included in the batch?	Yes	No	N/A
2.3 Is the Analytical Batch	Worksheet complete; includes as appropriate, volumes, count times, etc?	Yeş	No	N/A
2.4 Does the Worksheets i	include a Tracer Vial label for each sample?	Yes	No	N/A
3.0 QC & Samples				•
3.1 Is the blank results, yie	eld, and MDA within contract limits?	Yes	No	N/A
3.2 Is the LCS result, yield,	, and MDA within contract limits?	Yes	No	N/A
3.3 Are the MS/MSD result	ts, yields, and MDA within contract limits?	Yes	No	N/A
3.4 Are the duplicate result	t, yields, and MDAs within contract limits?	Yes	No	N/A
3.5 Are the sample yields a	and MDAs within contract limits?	Yes	No	N/A
I.0 Raw Data				
.1 Were results calculated	d in the correct units?	Yeş	No	N/A
I.2 Were analysis volumes	s entered correctly?	V	No	
i.3 Were Yields entered co	orrectly?	Yes	No	N/
I.4 Were spectra reviewed	d/meet contractual requirements?	V	No	
4.5 Were raw counts review	wed for anomalies?	Yes	No	N/A
5.0 Other				
5.1 Are all nonconformance	es included and noted?	Yes	No	N/A
5.2 Are all required forms f	filled out?	Yes	No	N/A
5.3 Was the correct method	odology used?	Yes	No	N/A
5.4 Was transcription chec	eked?	Yes	No	N/A
5.5 Were all calculations cl	hecked at a minimum frequency?	Yes	No	N/A
5.6 Are worksheet entries	complete and correct?	Yes	No	N/A
3.0 Comments on any No r	response:		CP-NON-POROPORONICO	cennecececcocal
NCM	<u> </u>		· · · · · · · · · · · · · · · · · · ·	100000000000000000000000000000000000000
First Level Review/	Pam anderson Date 8-160	6		
STL Richland QAS RADCALCv4.8.18		Pag	—— е 1	
. 10 11/10/0/10/10 VT.O. 10				



Data Review Checklist
RADIOCHEMISTRY
Second Level Review

QC Batch Number:	6207518 4104970
	10010

74	Yes (V)	No (V)	N/A (V)
Review Item	255(.)		
A. Sample Analysis			
the sample yields within acceptance chieffa!	-		
2. Is the sample Minimum Detectable Activity < the Contract			.
Detection Limit?	+		
3. Are the correct isotopes reported?			
D. OC Camples			
1. Is the Minimum Detectable Activity for the blank result \(\sin \)			
Contract Detection Limit?			
2. Does the blank result meet the Contract criteria?	1		
2 T 4 - Flowly regult < the Contract Detection Limit!			
4. Is the blank result > the Contract Detection Limit but the sample			
result of the Contract Defection Limit?	+		
5. Is the LCS recovery with contract acceptance criteria?			
7. Is the LCS Minimum Detectable Activity ≤ the Contract Detection			
Timit?			
8. Do the MS/MSD results and yields meet acceptance criteria?		-	
9. Do the duplicate sample results and yields meet acceptance			
criteria?			
C. Other			
1. Are all Nonconformances included and noted?			
2. Are all required forms filled out?			
3. Was the correct methodology used?			
A Was transcription checked?			
5. Were all calculations checked at a minimum frequency?			
6. Were units checked?			

. Are all required forms fined out:				
. Was the correct methodology used?			-	1
Was transcription checked?				
Were all calculations checked at a minimum frequency?	-			-
5. Were units checked?				J
Comments on any "No" response: See NCM				erromanne de la rele que promoden e de militario de la relevación de militario de la relevación de la releva
Commons on any				
				4
		,		
Soul A Colon		Date:	V-17-0	06

Clouseau **Nonconformance Memo**



NCM #: 10-08490

NCM Initiated By: Pam Anderson

Date Opened: 08/16/2006

Date Closed:

Classification: Anomaly

Status: **GLREVIEW**

Production Area: Environmental - Sep

Tests: Gamma by GER

Lot #'s (Sample #'s): J6G250322 (1),

QC Batches: 6207518

Nonconformance: MDA not met Subcategory: Matrix effect

Problem Description / Root Cause

Name

Date

Description

Pam Anderson 08/16/2006

Gamma sample H90221AE has a slightly elevated MDA (6.386pCi/L compared to 6.0

pCi/L). This is due to the high background caused by the Compton Scattering of the

large amount of Co 60 found in the sample.

Corrective Action

Name Pam Anderson Date

Corrective Action 08/16/2006 Note in case narrative.

Client Notification Summary

Client

Project Manager

Notified

Response How Notified

Note

Response

Response Note

Quality Assurance Verification

Verified By

Due Date

Status

Notes

This section not yet completed by QA.

Approval History

Date Approved

Approved By

Position

Page 1 of 1 Date Printed: 8/16/2006

8/8/2006 1:22:54 PM Sample Preparation/Analysis Balance Id:1120482733 384868, Pacific Northwest National Laboratory . AW Gamma PrpRC5017 Pipet #: Pacific Northwest National Lab TA Gamma by HPGE WD 4970 **5I CLIENT: HANFORD** Sep1 DT/Tm Tech: AnalyDueDate: 09/08/2006 Batch: 6207518 WATER pCi/L PM, Quote: HC, 57671 Sep2 DT/Tm Tech: SEQ Batch, Test: None Prep Tech: Rutherford Work Order, Lot. Total Initial Aliquot QC Tracer Dish Ppt or Count Count On | Off Detector CR Analys Comments: Sample DateTime Amt/Unit Amt/Unit Prep Date Size Geometry Time Min ld (24hr) Circle Init/Date 1 H901Q-1-AD 1980.40q,in 8/9/0602 100 1752 J6G250319-1-SAMP 07/25/2006 10:01 AmtRec: 20ML,5XLP,3X4LP #Containers: 9 Scr: Alpha: -3.10E-03 uCi/Sa Beta: 1.82E-03 uCi/Sa 2 H901Q-1-AJ-X 1980.40q.in J6G250319-1-DUP 07/25/2006 10:01 AmtRec: 20ML,5XLP,3X4LP #Containers: 9 Scr: Alpha: -3.10E-03 uCi/Sa Beta: 1.82E-03 uCi/Sa 3 H9012-1-AD 2002.50g,in J6G250319-2-SAMP 07/25/2006 10:01 AmtRec: 20ML,5XLP,3X4LP #Containers: 9 Scr: Alpha: 1.49E-04 uCi/Sa Beta: 1.22E-03 uCi/Sa 4 H9022-1-AE 1973.80q,in J6G250322-1-SAMP 07/25/2006 09:15 AmtRec: 20ML,125ML,250ML,2XLP #Containers: 5 Alpha: 1.57E-04 uCi/Sa Beta: -1.32E-04 uCi/Sa 5 H93FA-1-AA-B 1999.70g,in 1750 J6G260000-518-BLK 07/25/2006 09:15 AmtRec: #Containers: 1 Scr: Alpha: Beta: 6 H93FA-1-AC-C 2002.60a,in QCAG1270 1755 07/20/06,pd J6G260000-518-LCS 03/07/05.r 07/25/2006 09:15 AmtRec: #Containers: 1 Scr: Alpha: Beta: STL Richland Key: In - Initial Amt, fi - Final Amt, di - Diluted Amt, s1 - Sep1, s2 - Sep2 Page 1 ISV - Insufficient Volume for Analysis WO Cnt: 6 Richland Wa. pd - Prep Dt, r - Reference Dt, ec-Enrichment Cell, ct-Cocktailed Added Prep_SamplePrep v4.8.24

8/8/2006 1:22:56 PM

AnalyDueDate: 09/08/2006

Sample Preparation/Analysis

Geometry

Time Min

Size

AW Gamma PrpRC5017 **TA Gamma by HPGE**

Balance Id:1120482733

Pipet #: ___

5I CLIENT: HANFORD

Prep Date

Sep1 DT/Tm Tech:

Batch: 6207518 SEQ Batch, Test: None

Sample DateTime

pCi/L

Sep2 DT/Tm Tech:

(24hr) Circle

Detector

ld

Work Order, Lot. Total Initial Aliquot QC Tracer Dish Ppt or Count

Prep Tech: RutherfordJ Count On | Off CR Analyst, Comments:

Init/Date

Comments: H9022-SAMP "Comments: Insufficient volume for a full 2000 ml pour up on H9022. MD 8/8/06"

Amt/Unit

pH < 2.0 mp 8/8/06

Amt/Unit

All Clients	s for Batch:		W'			******				www.nta.tt-	
1	, Pacific Northwes	st Nationa	Laboratory	Pacific	Northwest Nati	onal Lab I	ic 57671				
304000,	, racitic Morchwes	sc Macrona.	Laboracory	FACILIC	MOLCHWEST Mac.	.Onar Dab, I	10 , 3/0/1				
H90101AD-SA	AMP Constituent Li	st:	***						***************************************		
Co-60	RDL:0.00E+00	pCi/L	LCL:	UCL:	RPD:	Cs-134	RDL:0.00E+00	pCi/L	LCL:	UCL:	RPD:
Cs-137	RDL:6.00E+00	pCi/L	LCL:70	UCL:130	RPD:20	Cs-137DA	RDL:6.00E+00	pCi/L	LCL:70	UCL:130	RPD:20
Eu-154	RDL:0.00E+00	pCi/L	LCL:	UCL:	RPD:	Eu-155	RDL:.00E+00	pCi/L	LCL:	UCL:	RPD:
K-40	RDL:0.00E+00	pCi/L	LCL:	UCL:	RPD:	Sb-125	RDL:0.00E+00	pCi/L	LCL:	UCL:	RPD:
		•,						_		5527	112 2 1
H93FA1AA-BI	LK:										
Co-60	RDL:0.00E+00	pCi/L	LCL:	UCL:	RPD:	Cs-134	RDL:0.00E+00	pCi/L	LCL:	UCL:	RPD:
Cs-137	RDL:6.00E+00	pCi/L	LCL:	UCL:	RPD:	Cs-137DA	RDL:6.00E+00	pCi/L	LCL:	UCL:	RPD:
Eu-154	RDL:0.00E+00	pCi/L	LCL:	UCL:	RPD:	Eu-155	RDL:.00E+00	pCi/L	LCL:	UCL:	RPD:
K-40	RDL:0.00E+00	pCi/L	LCL:	UCL:	RPD:	Sb-125	RDL:0.00E+00	pCi/L	LCL:	UCL:	RPD:
H93FA1AC-LC											
Cs-137	RDL:15	pCi/L	LCL:70	UCL:130	RPD:20	Cs-137DA	RDL:15	pCi/L	LCL:70	UCL:130	RPD:20
K-40	RDL:6	pCi/L	LCL:70	UCL:130	RPD:20	Ra-226	RDL:	pCi/L	LCL:70	UCL:130	RPD:20
RA-228	RDL:	pCi/L	LCL:70	UCL:130	RPD:20	RA-228DA	RDL:	pCi/L	LCL:70	UCL:130	RPD:20
บ-238	RDL:	pCi/L	LCL:70	UCL:130	RPD:20						
H901Q1AD-SA	AMP Calc Info:										
Uncert	Level (#s).: 2	Decay 1	o SaDt: Y	Blk Subt .:	N Sci.Not.	: Y ODR	s: B				
H93FA1AA-BI	LK:										
Uncert	Level (#s).: 2	Decay 1	o SaDt: Y	Blk Subt.:	N Sci.Not.	: Y ODR	s: B				
H93FA1AC-LC	CS:	_									
Uncert	Level (#s).: 2	Decay 1	o SaDt: Y	Blk Subt.:	N Sci.Not.	Y ODR	s: B				
1						Approved F	3 y			Date:	
										Date.	***************************************

STL Richland Richland Wa.

Key: In - Initial Amt, fi - Final Amt, di - Diluted Amt, s1 - Sep1, s2 - Sep2 pd - Prep Dt, r - Reference Dt, ec-Enrichment Cell, ct-Cocktailed Added

Page 2

ISV - Insufficient Volume for Analysis

WO Cnt: 6

Prep_SamplePrep v4.8.24

8/15/2006 4:39:16 PM

ICOC Fraction Transfer/Status Report ByDate: 8/15/2005, 8/20/2006, Batch: '6207518', User: *ALL Order By DateTimeAccepting

rk Ord CurStat	us Ad	cepting		Comments
CalcC	RutherfordJ	8/8/2006 12:41	:05 PM	
	wagarr	IsBatched	7/26/2006 4:08:34 PM	ICOC_RADCALC v4.8.24
	RutherfordJ	InPrep	8/8/2006 12:41:05 PM	RICH-RC-5017 REVISION 5
	RutherfordJ	Prep1C	8/8/2006 1:48:30 PM	RICH-RC-5017 REVISION 5
	ScottM	Prep2C	8/9/2006 2:15:56 PM	RICH-RC-5017 REVISION 4
	DAWKINSO	Cnt1C	8/9/2006 2:29:08 PM	RICH-RD-0007 REVISION 5
	DAWKINSO	CalcC	8/9/2006 8:05:31 PM	RICH-RD-0007 REVISION 5
	RutherfordJ	8/8/2006 1:48:3	80 PM	
	ScottM	8/9/2006 2:15:5	56 PM	
	DAWKINSO	8/9/2006 2:29:0	08 PM	
	DAWKINSO	8/9/2006 8:05:3	31 PM	
		CalcC RutherfordJ wagarr RutherfordJ RutherfordJ ScottM DAWKINSO DAWKINSO RutherfordJ ScottM DAWKINSO	CalcC RutherfordJ 8/8/2006 12:41 wagarr IsBatched RutherfordJ InPrep RutherfordJ Prep1C ScottM Prep2C DAWKINSO Cnt1C DAWKINSO CalcC RutherfordJ 8/8/2006 1:48:3 ScottM 8/9/2006 2:15:5 DAWKINSO 8/9/2006 2:29:0	CalcC RutherfordJ 8/8/2006 12:41:05 PM wagarr IsBatched 7/26/2006 4:08:34 PM RutherfordJ InPrep 8/8/2006 12:41:05 PM RutherfordJ Prep1C 8/8/2006 1:48:30 PM ScottM Prep2C 8/9/2006 2:15:56 PM DAWKINSO Cnt1C 8/9/2006 2:29:08 PM DAWKINSO CalcC 8/9/2006 8:05:31 PM RutherfordJ 8/8/2006 1:48:30 PM ScottM 8/9/2006 2:15:56 PM DAWKINSO 8/9/2006 2:29:08 PM

AC: Accepting Entry; SC: Status Change

STL Richland Richland Wa.



STL Richland

QAS_RADCALCv4.8.18

Data Review/Verification Checklist RADIOCHEMISTRY, First Level Review

8/15/2006 5:01:40 PM

Page 1

Lot No.. Due Date: J6G250319.J6G250322; 09/08/2006 Client, Site: 384868; PGW 615HANFORD HANFORD QC Batch No., Method Test: 6207517; RBETA-SR Beta by GPC-Sr/Y W04970; WATER SDG, Matrix: 8.0 Correction Calculation Protocol Used. No N/A 8.01 The Appropriate Methods Were Used To Analyze the Samples Yeş No N/A 8.02 Final Results Are in the Appropriate Activity Units Yes No N/A OK 8.03 Batch Contains the Required QC Appropriate for the Method Yes No N/A 8.04 The Correct Tracer and QC Vials Where Used in the Samples Yes No N/A 8.05 Sample was Appropriately Traced Before or After Fractionating the Sample Yes No N/A Yes No N/A 8.06 At Least the Minimum Sample Volume Was Used Analysis Volume => H90221AD 12.70<200.00 Q:VB No N/A 8.07 The Correct Count Geometry was Used. Yes 8.08 The Sample was Counted for the Minimum Count Time or CRDL was Achieved. No N/A Yes 8.09 Method Blank is within Control Limits. Yes No N/A OK 8.1 Comments: Yes No N/A 8.11 Matrix Blank is within Control Limits. No Matrix Blanks (MBlks) found in Batch! Yes No N/A 8.12 Method Blank(s) < QAS Limit Value (No B Flag Necessary). 8.13 QAS Specified Duplicate Equation Value within Control Limits. Yeş No N/A OK (RPD) 8.14 LCS within Control Limits. Yes No N/A N/A 8.15 MLCS within Control Limits. Yes No No Matrix Spikes (MLCS) found in Batch! Yes No N/A 8.16 MS within Control Limits. No Matrix Spike Samples (MS) found in Batch! 8.17 Tracer within Control Limits. No N/A 8.18 Samples are above Minimum Tracer Yield (No Failed Samples) No N/A Yes Yes 8.19 Sample Specific MDC <= CRDL. No/ N/A MDC/MDA > CRDL => H90221AD BETA 3.3E+01>4.0E+00 H90221AG BETA 3.2E+01>4.0E+00 Q:C1 8.2 Comments: Ncm # 10.08489 8.21 Result < Lc, Activity Not Detected, U Flag. Yes No N/A No Limit Specified! 8.22 Result < Mdc, Activity Not Detected, U Flag N/A Batch Positive Result => H901Q1AC BETA 1.1E+01 L:2.2E+00 H90121AC BETA 1.3E+01 L:2.0E+00 H90221AD BETA 1.1E+04 L:3.3E+01 8.23 Result <= Action Level, when Defined.</p> No N/A OK: No Action Level Found => BETA OK; No Callin Level Found => BETA Yes No N/A 8.24 Result + 3s >=0, Not Too Negative. OK

8.25		Yes	No	N/A
8 26	No FWHM found in Batch Data! Instruments have Current Calibrations.	Yes	Na	NI/A
ļ		100	140	11/7
8.27		Yes	No	N/A
8.28	No Count Library found in Batch Data! Instrument Background within Limits at Time of Counting. (Not Applicable to this version. To be developed in later version.	16ès	No	N/A
8.29	Instrument Check Source within Limits at the Time of Counting. (Not Applicable to this version. To be developed in later v	Méessi o	nNeo).	N/A
8.3	Comments:	***************************************		
8 31	Results Blank Subtracted as Appropriate.	Yeş	No	Ν/Δ
0.01	OK	V	140	IVA
8				
Fire	t Level Review Pan Anderson Date 8-16-06			
ŧ	Dichland			
مما	AND ALL AND	Page	2	

QAS_RADCALCv4.8.18



Data Review Checklist
RADIOCHEMISTRY
Second Level Review

OC Batch Number:	6207517 wo-4970

	Yes (√)	$No(\sqrt{)}$	N/A (V)
Review Item	105(1)	110(1)	
A. Sample Analysis			'
A - the cample yields within acceptance chieffa!	SAA MO	7	,
2. Is the sample Minimum Detectable Activity < the Conduct	31/16	/.	
Detection Limit?	 		
3. Are the correct isotopes reported?	 		
B. QC Samples			Ì
1. Is the Minimum Detectable Activity for the blank result \(\) inc			
Contract Detection Limit?	+		
2. Does the blank result meet the Contract criteria?	+-/		
3. Is the blank result < the Contract Detection Limit?			
4. Is the blank result > the Contract Detection Limit but the sample			
result < the Contract Detection Limit?	+		
5. Is the LCS recovery with contract acceptance criteria?	+		
7. Is the LCS Minimum Detectable Activity ≤ the Contract Detection			
Limit?			
8. Do the MS/MSD results and yields meet acceptance criteria?	 		
9. Do the duplicate sample results and yields meet acceptance			
criteria?		1	· · · · · · · · · · · · · · · · · · ·
C. Other			
1. Are all Nonconformances included and noted?	1		-
2. Are all required forms filled out?	+		
3. Was the correct methodology used?	+	+	
4 Was transcription checked?	+		
5. Were all calculations checked at a minimum frequency?			- · · · · · · · · · · · · · · · · · · ·
6. Were units checked?			

	1 / 1	1 1	
3. Was the correct methodology used?			
Was transcription checked?			
Was transcription checked at a minimum frequency?			Í
5. Were units checked?			
Comments on any "No" response: Sel ACM			V
		-particularly design of the second of the se	*
α		01/1	1

Clouseau Nonconformance Memo



NCM #: 10-08489

NCM Initiated By: Pam Anderson Date Opened: 08/16/2006

Date Closed:

Classification: Anomaly

Status: GLREVIEW

Production Area: Environmental - Sep

Tests: Beta by GPC-Sr/Y

Lot #'s (Sample #'s): J6G250322 (1),

QC Batches: 6207517

Nonconformance: MDA not met

Subcategory: Sample size reduced due to high residue mass

Problem Description / Root Cause

Name

<u>Date</u>

Description

Pam Anderson 08/16/2006

6 Beta sample H9022 and it's duplicate do not meet CRDL due to high dissolved solids.

The results of these two samples >MDA>CRDL.

Corrective Action

<u>Name</u>

Date

Corrective Action

Pam Anderson

08/16/2006

None at this time.

Client Notification Summary

Client

Project Manager

Notified

Response How Notified

<u>Note</u>

Response

Response Note

Quality Assurance Verification

Verified By

Due Date

Status

Notes

This section not yet completed by QA.

Approval History

Date Approved

Approved By

Position

Date Printed: 8/16/2006 Page 1 of 1

8/8/2006 9:09:47 AM Sample Preparation/Analysis Balance Id:1120482733 Pipet #: 229 384868. Pacific Northwest National Laboratory . BC Gross Beta PrpRC5014 Pacific Northwest National Lab S8 Gross Beta by GPC using Sr/Y-90 curve AnalyDueDate: 09/08/2006 Wo 4970 **5I CLIENT: HANFORD** Sep1 DT/Tm Tech: Batch: 6207517 WATER PM, Quote: HC . 57671 pCi/L Sep2 DT/Tm Tech: SEQ Batch, Test: None Prep Tech: RutherfordJ Work Order, Lot. Total Initial Aliquot QC Tracer Dish Ppt or Count On | Off Count Detector CR Analyst. Comments: Sample DateTime Amt/Unit Amt/Unit Prep Date Size Time Min ld (24hr) Circle Init/Date Geometry 1 H901Q-1-AC 201.30g.in 8/15/4s 200 AGA 15 80.7 J6G250319-1-SAMP 07/25/2006 10:01 AmtRec: 20ML,5XLP,3X4LP #Containers: 9 Scr: Alpha: -3.10E-03 uCi/Sa Beta: 1.82E-03 uCi/Sa 2 H9012-1-AC 198.00g,in AUB J6G250319-2-SAMP 600 07/25/2006 10:01 AmtRec: 20ML.5XLP.3X4LP #Containers: 9 Scr: Alpha: 1.49E-04 uCi/Sa Beta: 1,22E-03 uCi/Sa 3 H9022-1-AD 12.70g,in 94.6 ALC J6G250322-1-SAMP 07/25/2006 09:15 AmtRec: 20ML.125ML.250ML.2XLP #Containers: Scr: Alpha: 1.57E-04 uCi/Sa Beta: -1.32E-04 uCi/Sa 4 H9022-1-AG-X 12.70q.in J6G250322-1-DUP 108.D 240 07/25/2006 09:15 AmtRec: 20ML,125ML,250ML,2XLP #Containers: Scr: Alpha: 1.57E-04 uCi/Sa Beta: -1.32E-04 uCi/Sa 5 H93E6-1-AA-B 202.80g,in DIA J6G260000-517-BLK 0. 07/25/2006 09:15 AmtRec: #Containers: 1 Scr: Alpha: Beta: 6 H93E6-1-AC-C BESB2881 200.30a.in 07/20/06,pd J6G260000-517-LCS 09/21/04,r 07/25/2006 09:15 AmtRec: #Containers: 1 Scr: Alpha: Beta: STL Richland Key: In - Initial Amt, fi - Final Amt, di - Diluted Amt, s1 - Sep1, s2 - Sep2 Page 1 ISV - Insufficient Volume for Analysis WO Cnt: 6 Prep_SamplePrep v4.8.24 pd - Prep Dt, r - Reference Dt, ec-Enrichment Cell, ct-Cocktailed Added Richland Wa.

8/8/2006 9:09:48 AM		Sam	ple Prepa	ration/	Analysis		Balance Id:1120482733			
		BC Gross Beta P	•			Pipet #:				
A		S8 Gross Beta b 51 CLIENT: HAN	-	3 Sr/Y-90	curve		Sep1 DT/Tm	•		
AnalyDueDate: 09/08/2006		31 CLIENT: HAN	IFORD			**************************************				
Batch: 6207517 SEQ Batch, Test: None	pCi/L						Sep2 DT/Tm	Tech:		
,							Prep	Tech: ,RutherfordJ		
Work Order, Lot, Total Sample DateTime Amt/Un	Initial Aliquot it Amt/Unit	QC Tracer Prep Date	Dish Size	Ppt or Geomet	Count	Detector	Count On Off (24hr) Circle	CR Analyst, Init/Date	Comments:	
	omments: Aliquots reduced for omments: Aliquots reduced for	or H9012 due to weig	ht screen acti	vity. MD 8/	8/06"					
All Clients for Batch: 384868, Pacific Northwes	t National Laboratory	Pacific N	orthwest Na	ational I	ab, HC , 57	671				
H901Q1AC-SAMP Constituent Li BETA RDL:4	st: pCi/L LCL:	UCL:	RPD:			······································	NORCE.			
H93E61AA-BLK:	_									
BETA RDL:4 H93E61AC-LCS:	pCi/L LCL:	UCL:	RPD:							
Sr-90 RDL:	pCi/L LCL:70	UCL:130	RPD:20							
H901Q1AC-SAMP Calc Info: Uncert Level (#s).: 2 H93E61AA-BLK:	Decay to SaDt: Y	Blk Subt.: N	Sci.No	ot.: Y	ODRs: B					
Uncert Level (#s).: 2 H93E61AC-LCS:	Decay to SaDt: Y	Blk Subt.: N	Sci.No	ot.: Y	ODRs: B					
Uncert Level (#s).: 2	Decay to SaDt: Y	Blk Subt.: N	Sci.No	ot.: Y	ODRs: B					
				Appr	oved By			Date:		
STI Richland Key: In - Initial A	∆m t fi-Final Δm t di-Dilu	stod Amt. e1 - Son1	62 - Son2	Page 2	10	V Incufficient Ve	olume for Analysis	١٨	/∩ Cnt: 6	

8/15/2006 4:32:07 PM

ICOC Fraction Transfer/Status Report ByDate: 8/15/2005, 8/20/2006, Batch: '6207517', User: *ALL Order By DateTimeAccepting

Batch Wo	rk Ord CurStat	us Ad	ccepting		Comments
6207517				the state of the s	
4 <i>C</i>	InCnt1	RutherfordJ	8/8/2006 8:57:1	0 AM	
SC		wagarr	IsBatched	7/26/2006 4:08:34 PM	ICOC_RADCALC v4.8.24
SC .		RutherfordJ	Prep1C	8/8/2006 8:57:10 AM	RICH-RC-5014 REVISION 6
SC .		RutherfordJ	Prep1C	8/8/2006 10:26:00 AM	RICH-RC-5014 REVISION 6
SC .		ScottM	InPrep2	8/11/2006 9:47:16 AM	RICH-RC-5014 REVISION 6
SC .		ScottM	Prep2C	8/15/2006 7:49:27 AM	RICH-RC-5014 REVISION 6
C		BlackCL	InCnt1	8/15/2006 7:54:15 AM	RICH-RD-0003 REVISION 4
C		RutherfordJ	8/8/2006 10:26	:00	
C		ScottM	8/11/2006 9:47	:16	
IC		ScottM	8/14/2006 1:43	:39 PM	
AC .		ScottM	8/15/2006 7:49	:27	
AC		BlackCL	8/15/2006 7:54	:15	

AC: Accepting Entry; SC: Status Change

STL Richland Richland Wa.

Grp Rec Cnt:6 ICOCFractions v4.8.18



Data Review/Verification Checklist RADIOCHEMISTRY, First Level Review

8/18/2006 4:45:04 PM

Lot No., Due Date:

J6G250319; 09/08/2006

Client, Site:

384868; PGW 615HANFORD HANFORD

QC Batch No., Method Test: 6207512; RUISO Ulso by ALP

SDG, Matrix: W04970; WATER

SDG, Watrix:	WU4970; WATER			
8.0 Correction Calculation Pr OK	otocol Used.	Yes	No	N/A
	ds Were Used To Analyze the Samples	Yes	No	N/A
8.02 Final Results Are in the OK	Appropriate Activity Units	Yes	No	N/A
	uired QC Appropriate for the Method	Yes	No	N/A
	QC Vials Where Used in the Samples	Yes	No	N/A
	ely Traced Before or After Fractionating the Sample	Yes	No	N/A
8.06 At Least the Minimum S	ample Volume Was Used	Yes	No	N/A
8.07 The Correct Count Geor	metry was Used.	Yes	No	N/A
8.08 The Sample was Counte OK	ed for the Minimum Count Time or CRDL was Achieved.	Yes	No	N/A
8.09 Method Blank is within C OK	Control Limits.	Yes	No	N/A
8.1 Comments:				
8.11 Matrix Blank is within Co No Matrix Blanks (MBlks) fo		Yes	No	N/A
	Limit Value (No B Flag Necessary).	Yes	No	N/A
		Yes	No	N/A
8.14 LCS within Control Limit	ts. => H93EX1AC U-235 134 L:70 130	Yes	No	N/A
8.15 MLCS within Control Lin No Matrix Spikes (MLCS) fo	nits.	Yes	No	N/A
8.16 MS within Control Limits		Yes	No	N/A
No Matrix Spike Samples (N				W.
8.17 Tracer within Control Lir OK	nits.	Yes	МО	N/A
8.18 Samples are above Mini OK	imum Tracer Yield (No Failed Samples)	Yes	No	N/A
8.19 Sample Specific MDC <	= CRDL.	Yes	No	N/A
8.2 Comments:				
8.21 Result < Lc, Activity Not No Limit Specified!	Detected, U Flag.	Yes	No	N/A
8.22 Result < Mdc, Activity No No Positive Results OK	ot Detected, U Flag.	Yes	No	N/A
8.23 Result <= Action Level, OK; No Action Level Found U-235 U-238		Yea	No	N/A
OK; No Callin Level Found U-235	d => U-234		220-4-224 e latentologie	~~~
STL Richland		D.~.		***************************************
QAS_RADCALCv4.8.18		Page	; I	

U-238			
8.24 Result + 3s >=0, Not Too Negative. OK	V		N/A
8.25 Counting Spectrum are within FWHM Limits. FWHM > maxFWHM => H93EX1AC U-234 57.3>0 Q:V1	Yes	No	N/A
8.26 Instruments have Current Calibrations.	Yes	No	N/A
8.27 Correct Count Library Used. Library Not Specified => H901Q1AG I:[NUC_LIBR]AR_U. Q: H901Q1AH I:[NUC_LIBR]AR_U. Q: H90121AG I:[NUC_LIBR]AR_U. Q: H93EX1AA I:[NUC_LIBR]AR_U. Q: H93EX1AC I:[NUC_LIBR]AR_U. Q: 8.28 Instrument Background within Limits at Time of Counting. (Not Applicable to this version. To be developed in later ve	Yes		
8.29 Instrument Check Source within Limits at the Time of Counting. (Not Applicable to this version. To be developed in la			
		/ I FRO / .	IV/A
8.3 Comments:			
8.31 Results Blank Subtracted as Appropriate. OK	Yeş	No	N/A
First Level Review Pan Andersys Date 8-16-04			

STL Richland

QAS_RADCALCv4.8.18



Data Review Checklist RADIOCHEMISTRY Second Level Review

OC Batch Number:	620751L
OC Batch Number:	w04970

	Yes (V)	No(V)	N/A(V)
Review Item	100(1)		
A. Sample Analysis			
 Are the sample yields within acceptance of the Contract Is the sample Minimum Detectable Activity < the Contract 	-		
Detection Limit?			
3. Are the correct isotopes reported?			
1 Is the Minimum Detectable Activity for the State 1			
- I The office Limit?			
1 Link regult meet the Contract Circula:			
A Is the blank result > the Contract Detection Limit but the samp			
C to at 1)etection 1.1111111			
5. Is the LCS recovery with contract acceptance criteria?			
5. Is the LCS recovery will commact acceptable Activity ≤ the Contract Detection 7. Is the LCS Minimum Detectable Activity ≤ the Contract Detection			
Limit? 8. Do the MS/MSD results and yields meet acceptance criteria?			
8. Do the MS/MSD lesuits and yields meet acceptance 9. Do the duplicate sample results and yields meet acceptance			
criteria?			
C. Other			
1. Are all Nonconformances included and noted?			
2. Are all required forms filled out?			
3. Was the correct methodology used?			
- abacked/		7	
4. Was transcription elected: 5. Were all calculations checked at a minimum frequency?			
6. Were units checked?			

. Were all calculations checked at a minimum nequency	<i>y</i> :			
Were units checked?				
comment of the control of the contro				
Comments on any tree of				
	on any "No" response:			
		•		•
				•

Second Level Review Therry a Clam.

Date: 8-21-06

	8/4/2006 11:11:0	08 AM			Sample Prepa	aration/Ana	lysis		Balance	ld:1120482733	
	384868, Pacific Northwest National Laboratory , Pacific Northwest National Lab				rpRC5016/5086, S m-234,235,238 by		Pipet #:				
	AnalyDueDate:	09/08/2006	W04970		T: HANFORD				Sep1 DT/Tm Te	ch:	
8	Batch: 6207512 SEQ Batch, Test: N		pCi/L		PM, Qu	uote: HC , 576	71		Sep2 DT/Tm Tee	ch: My f	8-16-06
	SEQ Balch, 1651. N	one			111111				Prep Te	ch: ,RutherfordJ	I
ľ	Work Order, Lot, Sample Date	Total Amt /Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	QC Tracer Prep Date	Count Time Min	Detector Id	Count On Off (24hr) Circle	CR Analyst, Init/Date	Comments:
1,	1 H901Q-1-AG J6G250319-1-SAMP			198.80g,in	198.80g	UITC16122 08/03/06,pd 07/28/06,r	200		u l		
Ī	07/25/2006 10:01		Ami	tRec: 20ML,5XLP,3X4L	P #Containers: 9			Scr:	Alpha: -3.10E-03 uCi/Sa	a Beta:	1.82E-03 uCi/Sa
	2 H901Q-1-AH-X J6G250319-1-DUP	# 11		199.30g,in	199.30g	UITC16123 08/03/06,pd 07/28/06,r					
	07/25/2006 10:01		Ami	tRec: 20ML,5XLP,3X4L	P #Containers: 9			Scr:	Alpha: -3.10E-03 uCi/Sa	a Beta:	1.82E-03 uCi/Sa
al a	3 H9012-1-AG J6G250319-2-SAMP			203.90g,in	203.90g	UITC16124 08/03/06,pd 07/28/06,r					
	07/25/2006 10:01		Ami	tRec: 20ML,5XLP,3X4L	P #Containers: 9			Scr:	Alpha: 1.49E-04 uCi/Sa	Beta:	1.22E-03 uCi/Sa
3	4 H93EX-1-AA-B J6G260000-512-BLk			203.30g,in	203.30g	UITC16125 08/03/06,pd 07/28/06,r					
	07/25/2006 10:01		Ami	tRec: #0	Containers: 1	,		Scr:	Alpha:		Beta:
	5 H93EX-1-AC-C J6G260000-512-LCS			200.10g,in	200.10g	UISG1351 06/01/06,pd 01/20/04,r					
	07/25/2006 10:01		Am	tRec: #0	Containers: 1			Scr:	Alpha:		Beta:
	Comments:	pt 421	0 m2 8	14106							
	All Clients for	Batch:		1.4000000000000000000000000000000000000		NIA	CENTRAL CONTRACTOR CON			Constitution for	
			t National Labor	ratory Pac	ific Northwest N	ational Lab,	нс , 57671				
Ē	1901Q1AG-SAMP Co U-232 RI	onstituent Li OL:	st: pCi/L LCL:	20 UCL:10	5 RPD:20	บ-234	RDL:1.00E	+00 pCi/	L LCL:	UCL: F	RPD:
	STL Richland Richland Wa.	,	Amt, fi - Final Amt, ht, r - Reference Dt, e		• •	Page 1	ISV - In	sufficient Volun	ne for Analysis		WO Cnt: 5 _SamplePrep v4.8.2

8/4/2006 11:11:11 AM

AnalyDueDate: 09/08/2006

Sample Preparation/Analysis

7Y Ulso PrpRC5016/5086, SepRC5067(5039) SR Uranium-234,235,238 by Alpha Spec

Balance	ld:1120482733

Pipet #: _____

51 CLIENT: HANFORD

Sep1 DT/Tm Tech:

Batch: 6207512

pCi/L

Sep2 DT/Tm Tech:

SEQ Batch, Test: None

Prep Tech: ,RutherfordJ

Work Order, Lot Sample Date		Tota Acidifie	i i		Adj Aliq Amt (Un-Acidified)	QC Tracer Prep Date	Count Time Min	Detector Id	Count On Off (24hr) Circle	CR Analyst, Init/Date	Comments:
บ-235	RDL:1.00E+00	pCi/L	LCL:	UCL:	RPD:	บ-238	RDL:1.00E+	00 pCi/L	LCL:	UCL:	RPD:
H93EX1AA-BLK: U-232		G	T. GT 0.0				4 4				
U-235	RDL: RDL:1.00E+00	pCi/L pCi/L	LCL:20 LCL:	UCL:105 UCL:	RPD:20 RPD:	Ծ-234 Ծ-238	RDL:1.00E+ RDL:1.00E+			UCL:	RPD: RPD:
H93EX1AC-LCS:											
บ-232	RDL:	pCi/L	LCL:20	UCL:105	RPD:20	Uranium	RDL:	pCi/L	LCL:70	UCL:130	RPD:20
1901Q1AG-SAMP	Calc Info:										
Uncert L : 193EX1AA-BLK	evel (#s).: 2	Decay t	o SaDt: Y	Blk Subt.:	N Sci.Not	.: Y ODR	s: B				
Uncert L	evel (#s).: 2	Decay t	o SaDt: Y	Blk Subt.:	N Sci.Not	Y ODR	s: B				
Uncert L	evel (#s).: 2	Decay t	o SaDt: Y	Blk Subt.:	N Sci.Not	.: Y ODR	s: B				
						Approved 1	Bar			Date	

8/18/2006 3:23:08 PM

ICOC Fraction Transfer/Status Report ByDate: 8/18/2005, 8/23/2006, Batch: '6207512', User: *ALL Order By DateTimeAccepting

Batch Wo	ork Ord CurStat	tus Ad	cepting		Comments
6207512		www.gapanananananananananananananananananana			
4 <i>C</i>	CalcC	RutherfordJ	8/4/2006 10:58	:25	
SC		wagarr	IsBatched	7/26/2006 4:08:34 PM	ICOC_RADCALC v4.8.24
SC .		RutherfordJ	InPrep	8/4/2006 10:58:25 AM	RICH-RC-5016 REVISION 6
SC .		FABREM	Sep2C	8/16/2006 2:46:40 PM	RICH-RC-5039 REV 6
C C		DAWKINSO	InCnt1	8/16/2006 3:40:03 PM	RICH-RD-0008 REVISION 4
SC .		DAWKINSO	InCnt1	8/17/2006 1:58:50 PM	RICH-RD-0008 REVISION 4
C		DAWKINSO	CalcC	8/17/2006 2:41:09 PM	RICH-RD-0008 REVISION 4
C		FABREM	8/16/2006 2:46	:40 PM	
IC .		DAWKINSO	8/16/2006 3:40	:03 PM	
IC		DAWKINSO	8/17/2006 1:58	:50 PM	
1C		DAWKINSO	8/17/2006 2:41	:09 PM	

AC: Accepting Entry; SC: Status Change

STL Richland Richland Wa.



STL Richland

QAS RADCALCv4.8.18

Data Review/Verification Checklist RADIOCHEMISTRY, First Level Review

8/18/2006 9:47:43 AM

Page 1

Lot No., Due Date: J6G250319.J6G250322: 09/08/2006 Client. Site: 384868; PGW 615HANFORD HANFORD QC Batch No., Method Test: 6207513; RALPHA-A Alpha by GPC-Am SDG, Matrix: W04970; WATER 8.0 Correction Calculation Protocol Used. No N/A 8.01 The Appropriate Methods Were Used To Analyze the Samples No N/A OK 8.02 Final Results Are in the Appropriate Activity Units No N/A OK 8.03 Batch Contains the Required QC Appropriate for the Method No N/A Yes 8.04 The Correct Tracer and QC Vials Where Used in the Samples Yeş No N/A OK No N/A 8.05 Sample was Appropriately Traced Before or After Fractionating the Sample ٧es 8.06 At Least the Minimum Sample Volume Was Used Yes No/ N/A Analysis Volume => H901Q1AA 109.00<200.00 H90121AA 56.20<200.00 H90221AC 11.50<200.00 Q:VB No N/A 8.07 The Correct Count Geometry was Used. 8.08 The Sample was Counted for the Minimum Count Time or CRDL was Achieved. No N/A 8.09 Method Blank is within Control Limits. No N/A OK 8.1 Comments: 8.11 Matrix Blank is within Control Limits. Yes No N/A No Matrix Blanks (MBlks) found in Batch! Yes No N/A 8.12 Method Blank(s) < QAS Limit Value (No B Flag Necessary). Yes No N/A 8.13 QAS Specified Duplicate Equation Value within Control Limits. RPD > UCL: 20.0=> H90121AH ALPHA 250.0 (RPD) N/A 8.14 LCS within Control Limits. No OK 8.15 MLCS within Control Limits. Yes No N/A No Matrix Spikes (MLCS) found in Batch! 18.16 MS within Control Limits. Yes No N/A No Matrix Spike Samples (MS) found in Batch! No N/A 8.17 Tracer within Control Limits. Yes 8.18 Samples are above Minimum Tracer Yield (No Failed Samples) No N/A Yes No N/A 8.19 Sample Specific MDC <= CRDL. MDC/MDA > CRDL => H90221AC ALPHA 1.5E+01>3.0E+00 Q:C1 8.2 Comments: N/A 8.21 Result < Lc, Activity Not Detected, U Flag.</p> Yes No No Limit Specified! 8.22 Result < Mdc, Activity Not Detected, U Flag. No N/A No Positive Results 8.23 Result <= Action Level, when Defined. No N/A OK; No Action Level Found => ALPHA OK: No Callin Level Found => ALPHA No N/A 8.24 Result + 3s >=0, Not Too Negative. OK NCM 10-085/2

8.25		Yes	No	N/A
8.26	No FWHM found in Batch Data! Instruments have Current Calibrations.	Yes	No	N/A
8.27	Correct Count Library Used. No Count Library found in Batch Data!	Yes	No	N/A
8.28	Instrument Background within Limits at Time of Counting. (Not Applicable to this version. To be developed in later version	Kès	No	N/A
8.29	Instrument Check Source within Limits at the Time of Counting. (Not Applicable to this version. To be developed in later V	Ves io	nNeo).	N/A
	Comments:	V.A. (1988)		
		113.6001.11301.601.601.00	crose outstand	************************
8.31	Results Blank Subtracted as Appropriate. OK	Yes	No	N/A
CLONELSSALSANIA				
E:	t Level Review Pan Queles ser Date 878°06			
	liskland		-	
016	TOTAL AND A LO AD	Page	2	

QAS_RADCALCv4.8.18



Data Review Checklist RADIOCHEMISTRY Second Level Review

a crack L. Number	6207513
OC Batch Number:	W04970

	Yes (V)	No (1)	N/A (V)
Review Item	103(1)	2.5	
A. Sample Analysis			
 Are the sample yields within acceptance Is the sample Minimum Detectable Activity < the Contract 			
Detection Limit?	+		
3. Are the correct isotopes reported?	1		
 B. QC Samples 1. Is the Minimum Detectable Activity for the blank result ≤ the 			
- Detection Limit?	+		
Lines recult meet the Contract Citiona.	+		
4. In the blank result > the Confract Detection Limit but also server			
a that Detection Limit!	+		
Lander of the control		/	
 5. Is the LCS recovery with contract accordance 7. Is the LCS Minimum Detectable Activity ≤ the Contract Detection 			
to a ran and vields meet acceptance circula.			
8. Do the MS/MSD results and yields meet acceptance 9. Do the duplicate sample results and yields meet acceptance		-	
criteria?			
G ON			
1 Are all Nonconformances included and noted:			
2. Are all required forms filled out?	+		
3 Was the correct methodology used?	1		
· · · · · · · · · · · · · · · · · · ·			
4. Was transcription checked: 5. Were all calculations checked at a minimum frequency?	+		•
6. Were units checked?			

4. Was transcription checked?	
Was transcription enecked: 5. Were all calculations checked at a minimum frequency?	
6. Were units checked?	
Comments on any "No" response: Set NCM	

Clouseau **Nonconformance Memo**



NCM #: 10-08512

NCM Initiated By: Pam Anderson Date Opened: 08/18/2006

Date Closed:

Classification: Anomaly

Status: GLREVIEW

Production Area: Environmental - Sep

Tests: Alpha by GPC-Am

Lot #'s (Sample #'s): J6G250322 (1),

QC Batches: 6207513

Nonconformance: MDA not met

Subcategory: Sample size reduced due to high residue mass

Problem Description / Root Cause

Name

Date

Description

Pam Anderson 08/18/2006

Sample H90221AC for alpha does not meet CRDL due to high dissolved solids in the

sample.

Corrective Action

Name

Date

Corrective Action

Pam Anderson

08/18/2006 Report with the MDA achieved.

Client Notification Summary

Client

Project Manager

Notified

Response How Notified

Note

Response

Response Note

Quality Assurance Verification

Verified By

Due Date

Status

<u>Notes</u>

This section not yet completed by QA.

Approval History

Date Approved

Approved By

Position

Page 1 of 1 Date Printed: 8/18/2006

8/8/2006 9:09:45 AM Sample Preparation/Analysis Balance Id:1120482733 384868, Pacific Northwest National Laboratory, Pipet #: 229 AZ Gross Alpha PrpRC5014 Pacific Northwest National Lab S7 Gross Alpha by GPC using Am-241 curve AnalyDueDate: 09/08/2006 60 49 70 5I CLIENT: HANFORD Sep1 DT/Tm Tech: Batch: 6207513 WATER PM. Quote: HC . 57671 pCi/L Sep2 DT/Tm Tech: SEQ Batch, Test: None Prep Tech: RutherfordJ 60 U Work Order, Lot, Total Initial Aliquot QC Tracer Dish Ppt or Count Count On | Off Detector CR Analyst, Comments: Sample DateTime Amt/Unit Amt/Unit Prep Date Size Geometry Time Min ld (24hr) Circle Init/Date 1 H901Q-1-AA 109.00g,in 1326 J6G250319-1-SAMP 1.5 37,2,100 07/25/2006 10:01 AmtRec: 20ML.5XLP.3X4LP #Containers: 9 Scr: Alpha: -3.10E-03 uCi/Sa Beta: 1.82E-03 uCi/Sa 2 H9012-1-AA 56.20a.in 1118 18.6 J6G250319-2-SAMP 07/25/2006 10:01 AmtRec: 20ML.5XLP.3X4LP #Containers: 9 Scr: Alpha: 1.49E-04 uCi/Sa Beta: 1.22E-03 uCi/Sa 3 H9012-1-AH-X 56.10g,in IDA J6G250319-2-DUP 17,5 07/25/2006 10:01 AmtRec: 20ML.5XLP.3X4LP #Containers: 9 Scr: Alpha: 1.49E-04 uCi/Sa Beta: 1.22E-03 uCi/Sa 4 H9022-1-AC 11.50g.in BOB J6G250322-1-SAMP 07/25/2006 09:15 AmtRec: 20ML,125ML,250ML,2XLP #Containers: 5 Scr: Alpha: 1.57E-04 uCi/Sa Beta: -1.32E-04 uCi/Sa 5 H93E3-1-AA-B 200.30g,in J6G260000-513-BLK 0,2 07/25/2006 10:01 AmtRec: #Containers: 1 Scr: Alpha: Beta: 6 H93E3-1-AC-C 200.30q,in ASD3954 10 d 08/03/06.pd J6G260000-513-LCS 0,4 07/25/2006 10:01 AmtRec: #Containers: 1 Scr: Alpha: Beta: Key: In - Initial Amt, fi - Final Amt, di - Diluted Amt, s1 - Sep1, s2 - Sep2 WO Cnt: 6 STL Richland Page 1 ISV - Insufficient Volume for Analysis pd - Prep Dt. r - Reference Dt. ec-Enrichment Cell. ct-Cocktailed Added Prep_SamplePrep v4.8.24 Richland Wa.

8/8/2006 9:09:47 AM				Sample Preparation/Analysis AZ Gross Alpha PrpRC5014						Balance Id:1120482733 Pipet #:				
				S7 Gross Alpha by GPC using Am-241 curve										
AnalyDueDate: 09/08/2006				51 CLIENT: HA	NFORD					Sep1 DT/Tr	n Tech:			
Batch: 6207513 pC			Ci/L							Sep2 DT/Tr	m Tech:			
ŕ										Pre	p Tech: ,RutherfordJ			
Work Order, Lot, Sample DateTime	Total Amt/Un		nitial Aliquot Amt/Unit	QC Tracer Prep Date	Dish Size	Ppt or Geome	Cou	ınt	Detector Id	Count On Off (24hr) Circle	CR Analyst, Init/Date	Comments:		
Comments: H901 H901 H902	2-SAMP "Co 22-SAMP "Co	mments: Aliq mments: Aliq	uots reduced fo	r H9012 due to we r H9022 due to we	ight screen a	activity. MD 8	/8/06"							
All Clients for Ba	atch:							····						
384868, Pacifi	ic Northwes	t National	Laboratory	Pacific	Northwest	National :	Lab, HC,	57671	L					
H901Q1AA-SAMP Cons	stituent Li	st:		· · · · · · · · · · · · · · · · · · ·					***					
ALPHA RDL: H93E31AA-BLK:	:3	pCi/L	LCL:	UCL:	RPD:									
ALPHA RDL:	:3	pCi/L	LCL:	UCL:	RPD:									
Am-241 RDL	•	pCi/L	LCL:70	UCL:130	RPD:20									
H901Q1AA-SAMP Calo		Decay t	o SaDt: Y	Blk Subt.:	N Sci	.Not.: Y	ODRs: B							
H93E31AA-BLK: Uncert Level H93E31AC-LCS:	(#s).: 2	Decay t	o SaDt: Y	Blk Subt.:	N Sci	.Not.: Y	ODRs: B							
Uncert Level	(#s).: 2	Decay t	o SaDt: Y	Blk Subt.:	N Sci	.Not.: Y	ODRs: B							
						App	roved By _				Date:			
STL Richland K	ey: In - Initial A	\mt, fi - Fina	al Amt, di - Dilu	ted Amt, s1 - Sep	I, s2 - Sep2	Page 2		ISV -	Insufficient Vo	lume for Analysis		WO Cnt: 6		
Richland Wa.	pd - Prep D	t, r - Referen	ce Dt, ec-Enrich	nment Cell, ct-Coo	ktailed Adde	d					Prep_	SamplePrep v4.8.24		

pd - Prep Dt, r - Reference Dt, ec-Enrichment Cell, ct-Cocktailed Added

Richland Wa.

8/17/2006 5:13:22 PM

ICOC Fraction Transfer/Status Report ByDate: 8/17/2005, 8/22/2006, Batch: '6207513', User: *ALL Order By DateTimeAccepting

Ord CurStat	us Ac	cepting		Comments
**************************************	40.500			
CalcC	RutherfordJ	8/8/2006 8:57:0	01 AM	
	wagarr	IsBatched	7/26/2006 4:08:34 PM	ICOC_RADCALC v4.8.24
	RutherfordJ	Prep1C	8/8/2006 8:57:01 AM	RICH-RC-5014 REVISION 6
	RutherfordJ	Prep1C	8/8/2006 10:25:50 AM	RICH-RC-5014 REVISION 6
	ScottM	InPrep2	8/11/2006 9:47:11 AM	RICH-RC-5014 REVISION 6
	ScottM	Prep2C	8/15/2006 7:49:35 AM	RICH-RC-5014 REVISION 6
	BlackCL	InCnt1	8/15/2006 7:54:10 AM	RICH-RD-0003 REVISION 4
	DAWKINSO	CalcC	8/16/2006 9:40:13 PM	RICH-RD-0003 REVISION 4
	RutherfordJ	8/8/2006 8:57:3	32 AM	
	RutherfordJ	8/8/2006 10:25	:50	
	ScottM	8/11/2006 9:47	:11	
	ScottM	8/14/2006 1:43	:30 PM	
	ScottM	8/15/2006 7:49	:35	
	BlackCL	8/15/2006 7:54	:10	
	DAWKINSO	8/16/2006 9:40	:13 PM	
	AND THE PROPERTY OF THE PROPER	CalcC RutherfordJ wagarr RutherfordJ RutherfordJ ScottM ScottM BlackCL DAWKINSO RutherfordJ RutherfordJ ScottM ScottM ScottM ScottM ScottM ScottM ScottM ScottM ScottM	CalcC RutherfordJ 8/8/2006 8:57:0 wagarr IsBatched RutherfordJ Prep1C RutherfordJ Prep1C ScottM InPrep2 ScottM Prep2C BlackCL InCnt1 DAWKINSO CalcC RutherfordJ 8/8/2006 8:57:3 RutherfordJ 8/8/2006 10:25 ScottM 8/11/2006 9:47 ScottM 8/14/2006 1:43 ScottM 8/15/2006 7:49 BlackCL 8/15/2006 7:54	CalcC RutherfordJ 8/8/2006 8:57:01 AM wagarr IsBatched 7/26/2006 4:08:34 PM RutherfordJ Prep1C 8/8/2006 8:57:01 AM RutherfordJ Prep1C 8/8/2006 10:25:50 AM ScottM InPrep2 8/11/2006 9:47:11 AM ScottM Prep2C 8/15/2006 7:49:35 AM BlackCL InCnt1 8/15/2006 7:54:10 AM DAWKINSO CalcC 8/16/2006 9:40:13 PM RutherfordJ 8/8/2006 8:57:32 AM RutherfordJ 8/8/2006 10:25:50 ScottM 8/11/2006 9:47:11 ScottM 8/14/2006 1:43:30 PM ScottM 8/15/2006 7:49:35 BlackCL 8/15/2006 7:54:10

AC: Accepting Entry; SC: Status Change

STL Richland

Richland Wa.



Data Review/Verification Checklist RADIOCHEMISTRY, First Level Review

8/31/2006 7:20:41 AM

Lot No., Due Date:

J6G250319,J6G220144,J6G240196,J6G240197; 09/08/2006

Client, Site:

384868; PGW 615HANFORD HANFORD

QC Batch No., Method Test: 6207520; RGAMLEPS Gamma by LEPS

SDG. Matrix:

QAS_RADCALCv4.8.18

W04970; WATER

1 is the ICOC page complete; includes all applicable analysis, dates, SOP numbers, and revisions? Yes No No. 10 OC Batch. 1 Do the Summary/Detailed Reports include a calculated result for each sample listed on the QC Batch Sheet? Yes No. No. 2 Are the QC appropriate for the analysis included in the batch? Yes No. 3 is the Analytical Batch Worksheet complete; includes as appropriate, volumes, count times, etc? Yes No. No. 4 Does the Worksheets include a Tracer Vial label for each sample? Yes No. No. 0 OC & Sambles 1 is the blank results, yield, and MDA within contract limits? Yes No. No. 2 is the LCS result, yield, and MDA within contract limits? Yes No. No. 3 Are the MS/MSD results, yields, and MDA within contract limits? Yes No. No. 4 Are the duplicate result, yields, and MDAs within contract limits? Yes No. No. 4 Are the duplicate result, yields, and MDAs within contract limits? Yes No. No. 4 Are the sample yields and MDAs within contract limits? Yes No. No. 9 Raw, Data. Yes No. No. 1 Ware results calculated in the correct units? Yes No. No. 1 Ware results calculated in the correct units? Yes No. No. 1 Ware results calculated in the correct units? Yes No. No. 1 Ware results entered correctly? Yes No. No. No. 1 Ware results entered correctly? Yes No. No. No. No. 1 Ware results entered correctly? Yes No. No. No. No. 1 Was the correct methodology used? Yes No. No. No. No. 1 Was the correct methodology used? Yes No. No. No. No. 1 Was the correct methodology used? Yes No. No. No. No. 1 Was the correct methodology used? Yes No. No. No. No. 1 Was the correct methodology used? Yes No. No. No. No. 1 Was the correct methodology used? Yes No. No. No. No. 1 Was the correct methodology used? Yes No. No. No. No. 1 Was the correct methodology used? Yes No. No. No. No. 1 Was the correct methodology used? Yes No. No. No. No. 1 Was the correct methodology used? Yes No. No. No. No. 1 Was the correct methodology used? Yes No. No. No. No. 1 Was the correct methodology used? Yes No. No. No. 1 Was the correct methodology used.	SDG, Matrix:	W04970; V	WATER			
1 Do the Summary/Detailed Reports include a calculated result for each sample listed on the QC Batch Sheer? 2 Are the QC appropriate for the analysis included in the batch? 3 is the Analytical Batch Worksheet complete; includes as appropriate, volumes, count times, etc? 4 Does the Worksheets include a Tracer Vial label for each sample? 5 Q. QC & Samples 1 Is the blank results, yield, and MDA within contract limits? 7 Yes No. No. 1 Is the blank results, yield, and MDA within contract limits? 9 Is the LCS result, yield, and MDA within contract limits? 1 Is the blank results, yields, and MDA within contract limits? 1 Are the duplicate result, yields, and MDA within contract limits? 2 Is the LCS result, yields, and MDA within contract limits? 4 Are the duplicate result, yields, and MDAs within contract limits? 5 Are the sample yields and MDAs within contract limits? 9 Yes No. No. 1 Are the sample yields and MDAs within contract limits? 1 Were results calculated in the correct units? 1 Were results calculated in the correct units? 2 Wore analysis volumes entered correctly? 3 Were Yields entered correctly? 4 Wore spectra reviewed/meet contractual requirements? 5 Were analysis volumes entered correctly? 4 Wore spectra reviewed/meet contractual requirements? 5 Were analysis volumes entered correctly? 4 Was the correct methodology used? 5 Were all calculations checked at a minimum frequency? 5 Were all calculations checked at a minimum frequency? 5 Were all calculations checked at a minimum frequency? 5 Were all calculations checked at a minimum frequency? 6 Are worksheet entires complete and correct? 7 Yes No.		nplete; includes all ar	pplicable analysis, dates, SOP numbers, and revisions?	(eg	No	N/A
3 is the Analytical Batch Worksheet complete; includes as appropriate, volumes, count times, etc? Yes No	2.0 QC Batch 2.1 Do the Summary/Det	ailed Reports include	e a calculated result for each sample listed on the QC Batch Sheet?	(eg	No	N/A
4 Does the Worksheets include a Tracer Vial label for each sample? 9 No	2.2 Are the QC appropris	ite for the analysis inc	cluded in the batch?	'eş	No	N/A
1 Is the blank results, yield, and MDA within contract limits? 2 Is the LCS result, yield, and MDA within contract limits? 3 Are the MS/MSD results, yields, and MDA within contract limits? 4 Are the duplicate result, yields, and MDAs within contract limits? 5 Are the sample yields and MDAs within contract limits? 6 Are the sample yields and MDAs within contract limits? 7 Yes No No No No Plank Data 1 Were results calculated in the correct units? 9 Yes No No No No Plank Data 1 Were results calculated in the correct units? 9 Yes No No No No No Plank Data 1 Were results calculated in the correct units? 9 Yes No No No No No Plank Data 1 Were results calculated in the correct units? 9 Yes No No No No No Plank Data 1 Are all nonconformances included and noted? 1 Are all nonconformances included and noted? 2 Are all required forms filled out? 3 Was the correct methodology used? 4 Was transcription checked? 5 Were all calculations checked at a minimum frequency? 5 Were all calculations checked at a minimum frequency? 6 Are worksheet entries complete and correct? 7 Yes No No No Comments on any No response:	2.3 Is the Analytical Batc	h Worksheet complet	te; includes as appropriate, volumes, count times, etc?	'es	No	N/A
1 Is the blank results, yield, and MIDA within contract limits? 2 Is the LCS result, yield, and MIDA within contract limits? 3 Are the MS/MSD results, yields, and MDA within contract limits? 4 Are the duplicate result, yields, and MDAs within contract limits? 5 Are the sample yields and MDAs within contract limits? 6 Are the sample yields and MDAs within contract limits? 7 Yes No No No No Raw/ Data 7 Were results calculated in the correct units? 8 Were analysis volumes entered correctly? 9 Yes No No No No Raw Yields entered correctly? 9 Yes No No No No Results satisfied entered correctly? 9 Yes No No No No Results satisfied entered correctly? 9 Yes No No No No Results satisfied entered correctly? 9 Yes No No No No Results satisfied entered correctly? 9 Yes No No No No Results satisfied entered correctly? 9 Yes No No No No Results satisfied entered correctly? 9 Yes No No No No Results satisfied entered correctly? 9 Yes No No No No Results satisfied entered correct? 9 Yes No No No No Results satisfied entered correct? 9 Yes No No No No Results satisfied entered correct? 9 Yes No No No No Results satisfied entered correct? 9 Yes No No No Results satisfied entered correct? 9 Yes No No No Results satisfied entered correct? 9 Yes No No No Results satisfied entered correct? 9 Yes No No No Results satisfied entered correct? 9 Yes No No No No Results satisfied entered correct? 9 Yes No No No No Results satisfied entered correct? 9 Yes No No No Results satisfied entered correct? 9 Yes No No No No Results satisfied entered correct? 9 Yes No No No No Results satisfied entered correct satisfied entered correct? 9 Yes No No No No Results satisfied entered correct satisfied entered entered correct satisfied entered entered correct satisfied ente	2.4 Does the Worksheet	s include a Tracer Via	al label for each sample?	'eş	No	N/A
2 Is the LCS result, yield, and MDA within contract limits? 3 Are the MS/MSD results, yields, and MDA within contract limits? 4 Are the duplicate result, yields, and MDAs within contract limits? 5 Are the sample yields and MDAs within contract limits? 9 Ro No	3.0 QC & Samples					
3 Are the MS/MSD results, yields, and MDA within contract limits? 4 Are the duplicate result, yields, and MDAs within contract limits? 5 Are the sample yields and MDAs within contract limits? 6 Are the sample yields and MDAs within contract limits? 7 Yes No	3.1 Is the blank results, y	ield, and MDA within	contract limits?	'es	No	N/A
4 Are the duplicate result, yields, and MDAs within contract limits? 5 Are the sample yields and MDAs within contract limits? 9 No	3.2 Is the LCS result, yie	d, and MDA within co	ontract limits?	'es	No	N/A
5 Are the sample yields and MDAs within contract limits? 9 Raw Data 1 Were results calculated in the correct units? 2 Were analysis volumes entered correctly? 3 Were Yields entered correctly? 4 Were spectra reviewed/meet contractual requirements? 5 Were raw counts reviewed for anomalies? 9 No No No No Other: 1 Are all nonconformances included and noted? 2 Are all required forms filled out? 3 Was the correct methodology used? 4 Was transcription checked? 5 Were all calculations checked at a minimum frequency? 5 Were all calculations checked at a minimum frequency? 6 Are worksheet entries complete and correct? 7 Yes No No No Comments on any No response: Page 1.	3.3 Are the MS/MSD res	ılts, yields, and MDA	within contract limits?	'es	No	N/A
1 Were results calculated in the correct units? 2 Were analysis volumes entered correctly? 3 Were Yields entered correctly? 4 Were spectra reviewed/meet contractual requirements? 5 Were raw counts reviewed for anomalies? 7 Yes No No No Other. 1 Are all nonconformances included and noted? 2 Are all required forms filled out? 3 Was the correct methodology used? 4 Was transcription checked? 5 Were all calculations checked at a minimum frequency? 5 Are worksheet entries complete and correct? 7 Yes No No No Comments on any No response: Page 1 Page 1 Page 1	3.4 Are the duplicate res	ılt, yields, and MDAs	within contract limits?	'es	No	N/A
1 Were results calculated in the correct units? 2 Were analysis volumes entered correctly? 3 Were Yields entered correctly? 4 Were spectra reviewed/meet contractual requirements? 5 Were raw counts reviewed for anomalies? 6 Were raw counts reviewed for anomalies? 7 Yes No	3.5 Are the sample yields	and MDAs within co	ontract limits?	es V	No	N/A
3 Were Yields entered correctly? 4 Were spectra reviewed/meet contractual requirements? 5 Were raw counts reviewed for anomalies? 6 Other. 1 Are all nonconformances included and noted? 2 Are all required forms filled out? 3 Was the correct methodology used? 4 Was transcription checked? 5 Were all calculations checked at a minimum frequency? 6 Are worksheet entries complete and correct? 7 Yes No	4.0 Raw Data 4.1 Were results calculat	ed in the correct units	s?	(ea	No	N/A
4 Were spectra reviewed/meet contractual requirements? 5 Were raw counts reviewed for anomalies? 9 O Other 1 Are all nonconformances included and noted? 2 Are all required forms filled out? 3 Was the correct methodology used? 4 Was transcription checked? 5 Were all calculations checked at a minimum frequency? 5 Were all calculations checked at a minimum frequency? 6 Are worksheet entries complete and correct? 9 Yes No No No Comments on any No response: 1 Page 1. 26 Level Review Pana Quality Services 1 Page 1. 26 Level Review Pana Quality Services 1 Page 1. 26 Level Review Pana Quality Services 1 Page 1. 26 Level Review Page 1. 26 Le	1.2 Were analysis volum	es entered correctly?		es.	No	N/A
No N	4.3 Were Yields entered	correctly?		'es	No	N/A
O Other 1 Are all nonconformances included and noted? 2 Are all required forms filled out? 3 Was the correct methodology used? 4 Was transcription checked? 5 Were all calculations checked at a minimum frequency? 6 Are worksheet entries complete and correct? 7 Comments on any No response: 1 Page 1 1 Richland Page 1	1.4 Were spectra review	ed/meet contractual re	requirements?	(eg	No	N/A
Are all required forms filled out? Are all required forms filled out? Wes No	1.5 Were raw counts rev	ewed for anomalies?		eş V	No	N/A
2 Are all required forms filled out? 3 Was the correct methodology used? 4 Was transcription checked? 5 Were all calculations checked at a minimum frequency? 6 Are worksheet entries complete and correct? 7 Yes No No No Comments on any No response: 1 Page 1	5.0 Other					
Was the correct methodology used? Was transcription checked? Were all calculations checked at a minimum frequency? Are worksheet entries complete and correct? Comments on any No response: Date 8-31-06	5.1 Are all nonconformar	ces included and not				W
4 Was transcription checked? 5 Were all calculations checked at a minimum frequency? 6 Are worksheet entries complete and correct? 7 Comments on any No response: 1 Page 1	·			es V	No	N/A
No No Series all calculations checked at a minimum frequency? So Are worksheet entries complete and correct? Comments on any No response: So Comments on any No response: So Date 8-31-06	5.3 Was the correct meth	iodology used?		(es	No	N/A
6 Are worksheet entries complete and correct? 7 Comments on any No response: 1 Irst Level Review Pan Qualers Date 8-31-06 1 Richland	5.4 Was transcription che	ecked?		(es	No	N/A
O Comments on any No response: Sand Cuderson Date 8-31-06 L Richland Page 1	5.5 Were all calculations	checked at a minimu	ım frequency?	(es	No	N/A
irst Level Review Pan Qualers Date 8-31-06 L Richland	5.6 Are worksheet entries	s complete and corre	ect?	(es	No	N/A
L Richland Page 1	3.0 Comments on any No	response:			201101000000000000000000000000000000000	Saveran complete and
L Richland Page 1						
L Richland Page 1						
L Richland Page 1	First Level Review	Pan 10	Date 8-31-06			
	STL Richland	in his lift to be come of the filler		-age	1	



Data Review Checklist RADIOCHEMISTRY Second Level Review

OC Batch Number: 6207520	
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Review Item	Yes (V)	No (V)	N/A (V)
A. Sample Analysis			
1. Are the sample yields within acceptance criteria?			
2. Is the sample Minimum Detectable Activity < the Contract			.
Detection Limit?			
3. Are the correct isotopes reported?	 		
B. QC Samples			1
1. Is the Minimum Detectable Activity for the blank result ≤ the			
Contract Detection Limit?			
2. Does the blank result meet the Contract criteria?	+ /		
3. Is the blank result < the Contract Detection Limit?	1		
4. Is the blank result > the Contract Detection Limit but the sample	ļ		
result < the Contract Detection Limit?			
5. Is the LCS recovery with contract acceptance criteria?			
7. Is the LCS Minimum Detectable Activity ≤ the Contract Detection	-		
Limit?			
8. Do the MS/MSD results and yields meet acceptance criteria?			
9. Do the duplicate sample results and yields meet acceptance			
criteria?			•
C. Other			
1. Are all Nonconformances included and noted?	1		
2. Are all required forms filled out?	-		
3. Was the correct methodology used?	1		
1 Was transcription checked?	+		
5. Were all calculations checked at a minimum frequency?	1		-
6. Were units checked?			

Comments on any "No" response:	
	•
	According to the Control of the Cont
	,
A CONTRACTOR OF THE CONTRACTOR	

Second Level Review. Skerryl a Clan

Date: 8-31-06

8/14/2006 3:27:54 PM	Sam	ole Prepai	ration/Ana	Balance Id:2113224201					
384868, Pacific Northwest National L Pacific Northwest National Lab	aboratory ,	BN I-129 Prp/Sep TB Gamma by LE		•			Pipet	#:	- Oldstande - Oldstander - Oldstander
AnalyDueDate: 09/04/2006	04970	51 CLIENT: HAN		•			Sep1 DT/Tm Tech	ղ։	
Batch: 6207520 WATER	pCi/L		PM, Quo	te: HC , 576	571		Sep2 DT/Tm Tech	า:	
SEQ Batch, Test: None	•						•	n: NortonJ	
Wada Ordan Lat. II. Tatal	II Initial Aliquet	QC Tracer		Dates	Count	Detector	Count On Off		Comments
Work Order, Lot, Total Sample DateTime Amt/Unit	Initial Aliquot Amt/Unit	Prep Date	Dish Size	Ppt or Geometry	Count Time Min	Detector Id	(24hr) Circle	CR Analyst, Init/Date	Comments:
1 H9TN2-1-AC	3907.60g,in	ITA5534		~ ~ ~	100	(2	:2 🗸	Bolus	
J6G220144-2-SAMP		06/29/06		32.7	u		1308	734/65	
07/21/2006 10:29	AmtRec: 2	20ML,3XLP #Con	ainers: 4			Scr:	Alpha: 2.43E-03 uCi/Sa	Beta:	-1.64E-03 uCi/Sa
2 H9TN2-1-AD-X	3926.40g,in	ITA5535			100	,			
J6G220144-2-DUP		06/29/06		32.0		64	135V		
							1.00		
07/21/2006 10:29	AmtRec: 2	20ML,3XLP #Con	tainers: 4			Scr:	Alpha: 2.43E-03 uCi/Sa	Beta:	-1.64E-03 uCi/Sa
3 H9TPA-1-AC	3913.70g,in	ITA5536		_	100	1	1- 6	· Carrelland	
J6G220144-3-SAMP		06/29/06		31.2			1309	***************************************	
07/21/2006 12:11	AmtRec: 2	20ML,3XLP #Con	tainers: 4			Scr:	Alpha: -4.27E-04 uCi/Sa	(Beta:	: 2.84E-04 uCi/Sa
4 H9TPK-1-AC	3893.50g,in	ITA5537		1	100	/	,	X) a	
J6G220144-4-SAMP	3,	06/29/06		31.0		(2	1452	130/45	

07/21/2006 09:20	AmtRec: 2	20ML,2X500MLP,LP,2X4LF	#Containers: 6			Scr:	Alpha: -2.36E-03 uCi/Sa	Beta	: 7.92E-04 uCi/Sa
5 H9TP0-1-AC	3915.90g,in	ITA5538			100	100	4.4/5		•
J6G220144-5-SAMP		06/29/06		32.7		L4	1452		
	AmtRec: 2	20ML,2X500MLP,LP,2X4LF	P #Containers: 6			Scr:	Alpha: -8.56E-05 uCi/Sa	Beta	: 4.35E-04 uCi/Sa
6 H9WW0-1-AC	3922.10g,in	ITA5539			100	1			
J6G240196-1-SAMP		06/29/06		32.8			1453		
	**************************************		***************************************	<u> </u>					
07/24/2006 10:59	AmtRec: 2	20ML,500ML,4XLP,2X4LP	#Containers: 8			Scr:	Alpha: 1.90E-03 uCi/Sa	Beta:	-1.49E-04 uCi/Sa
7 H9WW5-1-AC	3947.20g,in	ITA5540			100		110	8/2.1/4	
J6G240197-1-SAMP		06/29/06		32.7		CV	10.56	12010	
07/24/2006 11:46	AmtRec:	20ML,2X500ML,LP,2X4LP	#Containers: 6			Scr:	Alpha: -1.11E-03 uCi/Sa	Beta	: 2.75E-03 uCi/Sa
									WO Oct 7
· ·		Diluted Amt, s1 - Sep1,		Page 1	ISV -	- Insufficient Volur	ne for Analysis	Pre	WO Cnt: 7 p_SamplePrep v4.8.2
Richland Wa. pd - Prep Dt, r -	Heterence Dt, ec-En	richment Cell, ct-Cock	alled Added					, 10	p_0ampio. 10p 14:0.2

8/14/2006 3:27:55 PM Sample Preparation/Analysis Balance Id:2113224201 384868. Pacific Northwest National Laboratory . BN I-129 Prp/SepRC5025 Pipet #: Pacific Northwest National Lab TB Gamma by LEPD **5I CLIENT: HANFORD** Sep1 DT/Tm Tech: AnalyDueDate: 09/04/2006 PM, Quote: HC, 57671 Batch: 6207520 WATER pCi/L Sep2 DT/Tm Tech: SEQ Batch, Test: None Prep Tech: RutherfordJ, NortonJ QC Tracer Count On | Off Work Order, Lot. Total Initial Aliquot Dish Ppt or Count Detector CR Analyst, Comments: Size Time Min Init/Date Sample DateTime Amt/Unit Amt/Unit Prep Date Geometry ld (24hr) Circle 8 H901Q-1-AE 3918.90q,in ITA5541 100 06/29/06 J6G250319-1-SAMP 33. 07/25/2006 10:01 AmtRec: 20ML,5XLP,3X4LP #Containers: 9 Scr: Alpha: -3.10E-03 uCi/Sa Beta: 1.82E-03 uCi/Sa 9 H9012-1-AE 3918.30q,in ITA5542 100 06/29/06 31.6 J6G250319-2-SAMP 07/25/2006 10:01 AmtRec: 20ML.5XLP.3X4LP #Containers: 9 Scr: Alpha: 1.49E-04 uCi/Sa Beta: 1.22E-03 uCi/Sa 10H93FK-1-AA-B 3905.20a.in ITA5543 100 1844 06/29/06 30.4 J6G260000-520-BLK 07/21/2006 10:29 AmtRec: #Containers: 1 Scr: Alpha: Beta: 11H93FK-1-AC-C ISD0677 100 3917.80a.in 1845 08/02/06 35.3 J6G260000-520-LCS 07/21/2006 10:29 Scr: #Containers: 1 Alpha: Beta: Comments: SAMPLES SAMPLES COOKED to DRYNESS AT STEP 11.3 OR RC5025 Jul 8-15-6 All Clients for Batch: 384868, Pacific Northwest National Laboratory Pacific Northwest National Lab, HC , 57671 H9TN21AC-SAMP Constituent List: RPD: I-129 RDL:1.00E+00 pCi/L LCL: UCL: H93FK1AA-BLK: RDL:1.00E+00 pCi/L LCL: UCL: RPD: I-129 H93FK1AC-LCS: pCi/L LCL:70 RPD:20 I-129 RDL:5 UCL:130 H9TN21AC-SAMP Calc Info: Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt .: N Sci.Not.: Y ODRs: B WO Cnt: 11 Key: In - Initial Amt, fi - Final Amt, di - Diluted Amt, s1 - Sep1, s2 - Sep2 Page 2 ISV - Insufficient Volume for Analysis STL Richland Prep SamplePrep v4.8.24 pd - Prep Dt, r - Reference Dt, ec-Enrichment Cell, ct-Cocktailed Added Richland Wa.

8/14/2006 3:27:56 PM			Samp	le Prepa	aration/An	Balance Id:2113224201				
		7	BN I-129 Prp/SepF TB Gamma by LEI	PD				_	et #:	
AnalyDueDate: 09/04	/2006		51 CLIENT: HANF	ORD				Sep1 DT/Tm Te	ech:	
Batch: 6207520 SEQ Batch, Test: None		pCi/L	***************************************		***************************************			Sep2 DT/Tm Te	ech:	
oza saton, root. Hono								Prep To	ech: ,NortonJ	
Work Order, Lot, Sample DateTime	Total Amt/Unit	Initial Aliquot Amt/Unit	QC Tracer Prep Date	Dish Size	Ppt or Geometry	Count Time Min	Detector Id	Count On Off (24hr) Circle	CR Analyst, Init/Date	Comments:
H93FK1AA-BLK: Uncert Level (#s	s).: 2	Decay to SaDt: Y	Blk Subt.: N	Sci.No	ot.: Y	ODRs: B	***************************************			
H93FK1AC-LCS: Uncert Level (#s	s).: 2	Decay to SaDt: Y	Blk Subt.: N	Sci.No	ot.: Y	ODRs: B				
					Approv	ed By			Date:	
		, fi - Final Amt, di - Dilu r - Reference Dt, ec-Enricl			Page 3	ISV	- Insufficient Vc	olume for Analysis		WO Cnt: 11 _SamplePrep v4.8.24

pd - Prep Dt, r - Reference Dt, ec-Enrichment Cell, ct-Cocktailed Added

Richland Wa.

8/31/2006 7:09:00 AM

ICOC Fraction Transfer/Status Report ByDate: 8/31/2005, 9/5/2006, Batch: '6207520', User: *ALL Order By DateTimeAccepting

Batch Work Ord	CurStat	us A	ccepting		Comments
6207520					
IC	CalcC	NortonJ	8/14/2006 2:25	:05 PM	
SC .		wagarr	IsBatched	7/26/2006 4:08:34 PM	ICOC_RADCALC v4.8.24
BC .		NortonJ	InPrep	8/14/2006 2:25:05 PM	RICHRC5025 REV3
C		NortonJ	InSep1	8/14/2006 3:26:40 PM	richrc5025 rev3
C		HoganS	Prep1C	8/30/2006 10:35:18 AM	RICH-RC-5025 REVISION 3
C		BlackCL	InCnt1	8/30/2006 11:26:51 AM	RICH-RD-0007 REVISION 5
C		DAWKINSO	CalcC	8/30/2006 9:46:28 PM	RICH-RD-0007 REVISION 5
C		NortonJ	8/14/2006 3:26	:40 PM	
С		HoganS	8/30/2006 10:3	5:18	
С		BlackCL	8/30/2006 11:2	6:51	
С		DAWKINSO	8/30/2006 9:46	:28 PM	
,		DAWKINGO	0/00/2000 0.40	.2011	

AC: Accepting Entry; SC: Status Change

STL Richland Richland Wa.

9/20/2006 1:12:00 PM

ICOC Fraction Transfer/Status Report ByDate: 9/20/2005, 9/25/2006, Batch: '6207520', User: *ALL Order By DateTimeAccepting

Q Batch V	Work Ord CurSta	atus A	ccepting		Comments
6207520					
AC	IsRpt	NortonJ	8/14/2006 2:25	:05 PM	
SC		wagarr	IsBatched	7/26/2006 4:08:34 PM	ICOC_RADCALC v4.8.24
SC		NortonJ	InPrep	8/14/2006 2:25:05 PM	RICHRC5025 REV3
SC		NortonJ	InSep1	8/14/2006 3:26:40 PM	richrc5025 rev3
SC		HoganS	Prep1C	8/30/2006 10:35:18 AM	RICH-RC-5025 REVISION 3
SC		BlackCL	InCnt1	8/30/2006 11:26:51 AM	RICH-RD-0007 REVISION 5
SC		DAWKINSO	CalcC	8/30/2006 9:46:28 PM	RICH-RD-0007 REVISION 5
SC		AndersonP	Rev1C	8/31/2006 7:52:29 AM	RICH-RC-0002 REVISION 7
SC		ICOC	IsRpt	9/9/2006 4:33:00 AM	ICOC_RADCALC v4.8.17
AC		NortonJ	8/14/2006 3:26	:40 PM	
AC		HoganS	8/30/2006 10:3	5:18	
AC		BlackCL	8/30/2006 11:20	6:51	
AC		DAWKINSO	8/30/2006 9:46	:28 PM	
AC		AndersonP	8/31/2006 7:52:	:29	

AC: Accepting Entry; SC: Status Change

STL Richland Richland Wa.

Grp Rec Cnt:6 ICOCFractions v4.8.18



Data Review/Verification Checklist RADIOCHEMISTRY, First Level Review

9/7/2006 10:22:50 AM

Lot No., Due Date:

QAS_RADCALCv4.8.18

J6G240196; 09/08/2006

Client, Site:

384868; PGW 615HANFORD HANFORD

QC Batch No., Method Test: 6207525; RSR85907 Sr-85/90 by GPC-7

SDG, Matrix: W04970; WATER

SDO	G, Matrix:	W04970; WATER			
8.0	Correction Calculation Proto OK	ocol Used.	Yes	No	N/A
8.01	The Appropriate Methods	Were Used To Analyze the Samples	Yes	No	N/A
8.02	OK Final Results Are in the Ap	opropriate Activity Units	Yes	No	N/A
8.03	•	red QC Appropriate for the Method	Yes	No	N/A
8.04		C Vials Where Used in the Samples	Yea	No	N/A
8.05	OK Sample was Appropriately	Traced Before or After Fractionating the Sample	Yea	No	N/A
8.06	OK At Least the Minimum San	nple Volume Was Used	Ye s	No	N/A
8.07	OK The Correct Count Geome	etry was Used.	Yeş	No	N/A
0.00	OK The Sample was Counted	for the Minimum Count Time or CRDL was Achieved.	Ved	Nο	N/A
	OK		\mathbf{V}		
8.09	Method Blank is within Cor	ntrol Limits.	Yes	No	N/A
8.1	Comments:				
8.11	Matrix Blank is within Cont No Matrix Blanks (MBlks) foun		Yes	No	N/A
8.12		mit Value (No B Flag Necessary).	Yes	No	N/A
8.13	QAS Specified Duplicate E RPD > UCL: 20.0=> H9WW0 H9WW01AF SR-90 400.0		Yes	No	/ N/A
8.14	H9WW01AF SR-90 140.0 (R LCS within Control Limits.	<i>FU</i>)	Yes	No	N/A
8.15	OK MLCS within Control Limits	S.	Yes	No	N/A
8 16	No Matrix Spikes (MLCS) foun MS within Control Limits.	ıd in Batch!	Yes	No	N/A
1	No Matrix Spike Samples (MS)				V
8.17	Tracer within Control Limit OK	S.	Yes	No	N/A
8.18	Samples are above Minimor	um Tracer Yield (No Failed Samples)	Yes	No	N/A
8.19	Sample Specific MDC <= 0	CRDL.		No	N/A
8.2	Comments:				
8.21	Result < Lc, Activity Not D	etected, U Flag.	Yes	No	N/A
8.22	No Limit Specified! Result < Mdc, Activity Not No Positive Results	Detected, U Flag.	Yes	No	N/A
8.23	OK Result <= Action Level, wh OK; No Action Level Found =:	> SR-90	Yeg	No	N/A
8.24	OK; No Callin Level Found = Result + 3s >= 0, Not Too OK		Yes	No	N/A
1	Richland		Page	 ə 1	
WAS	RADCALCv4.8.18		_		

8.25 Counting Spectrum are within FWHM Limits. No FWHM found in Batch Data!	Yes	No	N/A
8.26 Instruments have Current Calibrations.	Yes	No	N/A
8.27 Correct Count Library Used.	Yes	No	N/A
No Count Library found in Batch Data! 8.28 Instrument Background within Limits at Time of Counting. (Not Applicable to this version. To be developed in I	ater version \&s	No	N/A
8.29 Instrument Check Source within Limits at the Time of Counting. (Not Applicable to this version. To be develop	ed in later Wes ic	on Neò .	N/A
8.3 Comments:			
8.31 Results Blank Subtracted as Appropriate. OK	Yes	No	N/A
First Level Review Pan anderson Date 9-7-0		_	

STL Richland
QAS_RADCALCv4.8.18

Page 2



Data Review Checklist RADIOCHEMISTRY Second Level Review

QC Batch Number:	6701525
	1004970

A. Sample Analysis	Yes (√)	No (√)	N/A (√)
an ounipio anni yoto			
1. Are the sample yields within acceptance criteria?			
2. Is the sample Minimum Detectable Activity < the Contract			
Detection Limit?			
3. Are the correct isotopes reported?			
B. QC Samples			
1. Is the Minimum Detectable Activity for the blank result ≤ the			
Contract Detection Limit?			
2. Does the blank result meet the Contract criteria?			
3. Is the blank result < the Contract Detection Limit?			
4. Is the blank result > the Contract Detection Limit but the sample			
result < the Contract Detection Limit?			
5. Is the LCS recovery with contract acceptance criteria?			
7. Is the LCS Minimum Detectable Activity ≤ the Contract Detection			
Limit?	-		
8. Do the MS/MSD results and yields meet acceptance criteria?			
9. Do the duplicate sample results and yields meet acceptance			
criteria?			
C. Other			
1. Are all Nonconformances included and noted?			
2. Are all required forms filled out?			
3. Was the correct methodology used?			
4. Was transcription checked?			
5. Were all calculations checked at a minimum frequency?			
6. Were units checked?			

BATCH No. 6207525

9/7/2006 10:22:51 AM

Data Verification Log (Qualifiers) Batch Verification Log Order by Qualifier Type, Work Order, Parameter



			Daton ven	ilcation Log	Order by	Qualifier Type	e, work Order,	i alametei			
Work Order No.	Parameter Code	Verification Item		LCL	UCL	Associated Value	Text Limit	Limit Units	Qualifier	Discription	Validation Text
<i>VFCL</i> 8.13 H9WW01AF	SR-90	DupCheck	RERr > DupUCL		20.0	36.0		%		Duplicates outside of control limits RPD equation.	RPD > UCL : 20.0=> H9WW01AF SR-90 36.0, H9WW01AF SR-90 400.0, H9WW01AF SR-90 140.0 (RPD)
<i>vND</i> 8,22 H9WW01AD	SR-90	ResultLTLcMdcA	c ResultValue < ResultUCL		0.43	0.38		pCi/L	U5	Result <= MDC, where MDC = 4.65 * sqrt(BlkBkg) + ~3.	No Positive Results, OK

8/10/2006 7:44:37 AM Sample Preparation/Analysis Balance Id:1120482733 384868, Pacific Northwest National Laboratory, CL Sr-90 Prp/SepRC5006(5071) Pipet #: Pacific Northwest National Lab 3:31 7,27 TL Sr-85 by Nal and Sr-90 by GPC 7 day ingrowth Sep1 DT/Tm Tech: 8-24-04 **5I CLIENT: HANFORD** AnalyDueDate: 09/07/2006 Wo 4970 MA 20:11 Batch: 6207525 PM, Quote: HC, 57671 Sep2 DT/Tm Tech: 05 5000 WATER pCi/L SEQ Batch, Test: None DDM Prep Tech: ,RutherfordJ Work Order, Lot. Total Initial Aliquot QC Tracer Tracer Ppt or Count On | Off CR Analyst, Count Detector Comments: Sample DateTime Amt/Unit Amt/Unit Prep Date Yield Size Geometry Time Min ld (24hr) Circle Init/Date 1 H9WW0-1-AD SRTB13925 812810602 1000.60a.in 1820 08/03/06,pd J6G240196-1-SAMP Ex:7/23/2007 07/24/2006 10:59 AmtRec: 20ML.500ML.4XLP.2X4LP #Containers: 8 Scr: Beta: -1.49E-04 uCi/Sa Alpha: 1.90E-03 uCi/Sa 2 H9WW0-1-AF-X 999.80a.in SRTB13926 34 08/03/06.pd J6G240196-1-DUP 06/21/06,r 11X36 Ex:7/23/2007 ----07/24/2006 10:59 AmtRec: 20ML,500ML,4XLP,2X4LP #Containers: 8 Scr: Alpha: 1.90E-03 uCi/Sa Beta: -1.49E-04 uCi/Sa 3 H93F3-1-AA-B 999.90q.in SRTB13927 08/03/06.pd J6G260000-525-BLK 06/21/06.r Ex:7/23/2007 07/24/2006 10:59 AmtRec: #Containers: 1 Scr: Alpha: Beta: 4 H93F3-1-AC-C SRSG1251 1000.30g,in 07/27/06,pd J6G260000-525-LCS AmtRec: Scr: Beta: 07/24/2006 10:59 #Containers: 1 Alpha: Key: In - Initial Amt, fi - Final Amt, di - Diluted Amt, s1 - Sep1, s2 - Sep2 ISV - Insufficient Volume for Analysis WO Cnt: 4 STL Richland Prep_SamplePrep v4.8.24 pd - Prep Dt, r - Reference Dt, ec-Enrichment Cell, ct-Cocktailed Added Richland Wa.

8/1	0/2006	7:44:39	ΑN

Sample Preparation/Analysis

Balance Id:1120482733

CL Sr-90 Prp/SepRC5006(5071)

TL Sr-85 by Nal and Sr-90 by GPC 7 day ingrowth

Pipet #: _____

AnalyDueDate: 09/07/2006

5I CLIENT: HANFORD

Sep1 DT/Tm Tech:

Batch: 6207525 SEQ Batch, Test: None pCi/L

Sep2 DT/Tm Tech:

All Clients for Batch:

Prep Tech: ,RutherfordJ

Work Order, Lot, Total	Initial Aliquot	QC Tracer	Tracer	Dish	Ppt or	Count	Detector	Count On Off	CR Analyst,	Comments:
Sample DateTime Amt/Unit	Amt/Unit	Prep Date	Yield	Size	Geometry	Time Min	ld	(24hr) Circle	Init/Date	

Comments:

PH=210 m 5 8/10/06

384868	, Pacific Northwe	st National	l Laboratory	Pacific	Northwest Na	ational Lab,	HC , 57671				
H9WW01AD-SA	AMP Constituent I	ist:			***************************************					- 1244	
Sr-85	RDL:	pCi/L	LCL:20	UCL:105	RPD:20	Sr-90	RDL:2	pCi/L	LCL:70	UCL:130	RPD:20
H93F31AA-BI	LK:										
Sr-85	RDL:	pCi/L	LCL:20	UCL:105	RPD:20	Sr-90	RDL:2	pCi/L	LCL:	UCL:	RPD:
H93F31AC-LO	cs:										
Sr-85	RDL:	pCi/L	LCL:20	UCL:105	RPD:20	sr-90	RDL:2	pCi/L	LCL:70	UCL:130	RPD:20
H9WW01AD-SA	AMP Calc Info:										
Uncert	t Level (#s).: 2	Decay 1	to SaDt: Y	Blk Subt.:	N Sci.No	ot.: Y 01	ORs: B				
H93F31AA-BI	LK:										
Uncert	t Level (#s).: 2	Decay	to SaDt: Y	Blk Subt.:	N Sci.No	ot.: Y 01	DRs: B				
H93F31AC-L	CS:										
Uncert	t Level (#s).: 2	Decay	to SaDt: Y	Blk Subt.	N Sci.No	ot.: Y 01	ORs: B				
						Approve	i By			Date:	

Prep_SamplePrep v4.8.24

9/7/2006 10:21:50 AM

ICOC Fraction Transfer/Status Report ByDate: 9/7/2005, 9/12/2006, Batch: '6207525', User: *ALL Order By DateTimeAccepting

Batch Wo	rk Ord CurStat	us Ad	cepting		Comments
207525	t og sages år en 2 - en elektriker en men sener en				
IC	CalcC	RutherfordJ	8/10/2006 7:02:	44	
SC .		wagarr	IsBatched	7/26/2006 4:08:34 PM	ICOC_RADCALC v4.8.24
iC		RutherfordJ	InPrep	8/10/2006 7:02:44 AM	RICH-RC-5016 REVISION 6
SC .		RutherfordJ	Prep1C	8/10/2006 7:46:21 AM	RICH-RC-5016 REVISION 6
SC .		ManisD	Sep1C	8/28/2006 5:17:28 PM	RICH-RC-5006 REVISION 6
SC .		DAWKINSO	InCnt1	8/28/2006 5:50:52 PM	RICH-RD-0007 REVISION 5
SC .		DAWKINSO	Cnt1C	8/28/2006 9:52:27 PM	RICH-RD-0007 REVISION 5
SC .		ManisD	Sep2C	9/5/2006 4:37:38 PM	RICH-RC-5071 REVISION 4
SC .		DAWKINSO	InCnt2	9/5/2006 4:47:33 PM	RICH-RD-0003 REVISION 4
SC .		BlackCL	CalcC	9/7/2006 8:24:31 AM	RICH-RD-0003 REVISION 4
C		RutherfordJ	8/10/2006 7:46	21	
IC		ManisD	8/28/2006 5:17:	28 PM	
IC		DAWKINSO	8/28/2006 5:50	:52 PM	
IC		DAWKINSO	8/28/2006 9:52	27 PM	
iC		ManisD	9/5/2006 4:37:3	88 PM	
IC		DAWKINSO	9/5/2006 4:47:3	33 PM	
iC		BlackCL	9/7/2006 8:24:3	31 AM	

PNNL JG	6220 WOL	144	10 (6-7	CHAI	N OF	CUSTODY/	SAMPLE	ANALYSIS	REQUEST	C.O.C. #	A06-007-15
I ~ **			9-14-	04		la						age <u>1</u> of <u>1</u>
Collector	DURATEK					Contact/Re Dot Stew				Telephone No. 509-376-5056	MSIN	FAX
SAF No.	. D. WAL	L.				Sampling (Purchase Order/Cha	arge Code	
A06-007 Project Title						Hanford			a	Ice Chest No.	Temp.	•
LLWMA(4)-PA. Shinned To (Lab)	JULY 2006					Method of	5- 57 w/	14/0	7	Bill of Lading/Air B	U 5 ~ 004	
Severn Trent Inc	ornorated. Ric	hland				Govt. Ve						A.B. HRAZINING S. SULA.
Protocol Other							Pric	ority: 45 Days		Offsite Property No.	•	
POSSIBLE SAMP	LE HAZARI	S/RE	MARKS					14 days.	TRUCTIONS H GW samples submitted unde & deliverables to DL Stewa	old Time er "W", "S", "I", "A" or "G" or rt, PNNL	Total Activity Exer 06 SAFs into one SDG, no	mption: Yes V No Lot to exceed SDG closure of
Sample No.	Lab ID	*	Date	Time	No/Type	Container			Sample Analysis	- Audition		Preservative
B1JK35		w	7-21-06	1211	1x1000-m	LP	906.0_H3_LSC: Triti	um (1)				None
B1JK35		w	1	1	1x20-mL	Р	Activity Scan			19TNT Su)	None
B1JK35		w	1		2x4000-m	L G/P	I129LL_SEP_LEPS_	GS_LL: I-129 (1)		HATPI	4	None
			*					· · · · · · · · · · · · · · · · · · ·	1 244 - 444	1111		
		\wedge		00		1:60	0//	-				
Relinquished By	TEK Print	$\langle n \rangle$	Sign	UIJ.	Date/	Time / T/	Received By . Wells	/ Print /	Sign	Date/Time	:00	Matrix *
Relinquished By	WALL (A		. ua		Date/	ZIIIO	Received By	V 52.0	OLUV	JUL 2 1 2006 Date/Time	S	DS = Drum Solid DI. = Drum Lioui T = Tissue WI = Wine L = Liouid
Relinquished By					Date/	Γime	Received By			Date/Time	O = Oil A = Air	V = Vegetation X = Other
Relinquished By			-		Date/	Гіте	Received By		- 10 - 10 - 10 - 10 - 10 - 10 - 10 - 10	Date/Time		
FINAL SAMPLE DISPOSITION		Method	(e.g., Return to	customer, per	lab procedure	e, used in proc	ess)	•	Disposed By		Da	tte/Time

PNNL U6	43201 W049	70		/ ····	CHAIN	1 OF (CUSTODY	//SA	MPLE ANALY	YSIS R	EQUEST	C.C		106-00	
C. D. 4	JUPATEK)ue 19-4	-06							r-I Na	MCDV		<u>1</u> of	1
<u> </u>	D. WALI	2				Contact/Re Dot Stew					Telephone No. 509-376-5056	MSIN	FA	X	
SAF No.						ampling C					Purchase Order/Char	ge Code			
A06-007 Project Title						Hanford		ຄ	11:09]	ce Chest No.	2 7 WY	Femp.		
LLWMA(4)-PA	JULY 2006			***************************************			75- SAW S	γ .	14/0/						
Shinned To (Lah) Severn Trent Inc		hland		ANYOMOROAGARAGARAGARAGARAGA		1ethod of 3 Govt. Ve					Bill of Lading/Air Bil	No.			
Protocol	SON GENERALIZATION AND RECORDER CONTRACTOR AND RESIDENCE	DESCRIPTION STREET FRANCES (SMI	THE RESIDENCE AND ADDRESS OF THE PARTY OF TH	Epocode rate of the Control of the C	DESCRIPTION OF THE PROPERTY OF			riority	: 45 Days		Offsite Property No.			·	
Other POSSIBLE SAMI ** **	PLE HAZARI	OS/RE	MARKS			The second secon		SPI Ba	ECIAL INSTRUCTIONS atch all PNNL GW samples subrated all PNNL in days. It is a submit invoices & deliverables to		7", "S", "I", "A" or "G" 06	Total Activit SAFs into one S			
Sample No.	Lab ID	*	Date	Time	No/Type C	Container			Sample A	nalysis			F	reservative	:
B1JK36		W	2-21-00	1029	1x1000-mL	Р	906.0_H3_LSC: Tri	ritium (1)					None	
B1JK36		W	1	1	1x20-mL P		Activity Scan			H	PTNZ			None	
B1JK36		W	4		2x4000-mL	G/P	I129LL_SEP_LEPS	S_GS_	LL: I-129 (1)	······································			,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	None	,
						,									
										***************************************					***************************************

										· · · · · · · · · · · · · · · · · · ·					***************************************
										M1150M					
										M1150M	· · · · · · · · · · · · · · · · · · ·				
										***************************************	•				
									, , , , , , , , , , , , , , , , , , , ,						
							. [/			***************************************					
Relinquished By AT			(1) Sign	V	Date/Tin	me/4500 2006	Received by We	lih	S. Welch	mahts	Date/Time /245			rix *	
Relinquished By		<u> </u>			Date/Tin	the state of the same	Received By				Date/Time	S = Sc SE = Sc SO = Sc SL = SI W = W	ediment olid udge	DI. = T = WI =	Drum Solid Drum Liqui Tissue Wine Liquid
Relinquished By					Date/Tin	ne	Received By				Date/Time	O = O A = A	11	V =	Vegetation Other
Relinquished By				-	Date/Tin	me	Received By		***************************************	WHAT AND A STATE OF THE STATE O	Date/Time				
FINAL SAMPL DISPOSITION		Method	(e.g., Return to	customer, per	lab procedure, v	used in proce	ess)		Disposed By	***************************************		***************************************	Date/Tin	ne	

PNNLUGE Du	(-)201	44	4		СНАП	V OF (CUSTODY/S	SAMPLE ANALY	SIS REQUEST	C.O.C.#	06-007-19
\mathcal{T}_{μ}	09.4	04								Page 1	of <u>1</u>
Collector	DURATE	6			•	Contact/Re		**************************************	Telephone No. 509-376-5056	MSIN FAX	
SAF No.	L. D. WA	1			5	Sampling C)rigin		Purchase Order/Charge Co	de	
A06-007 Project Title	· · · · · · · · · · · · · · · · · · ·			-		Hanford		11 .00	Ice Chest No. PP03	Temp.	
LLWMA(4)-PA.	JULY 2006				,	Method of	Shinmont	14 109	Bill of Lading/Air Bill No.	004	
Severn Trent Inc.	ornorated, Ric	hland				Govt. Ve					
Protocol Other							Prior	rity: 45 Days	Offsite Property No.		
POSSIBLE SAMP ** **	LE HĄZARI	OS/RE	MARKS					SPECIAL INSTRUCTIONS Batch all PNNL GW samples submit 14 days. Submit invoices & deliverables to DI	ted under "W", "S", "I", "A" or "G" 06 SAFs	al Activity Exemption: into one SDG, not to exce	
Sample No.	Lab ID	*	Date	Time	No/Type	Container		Sample Ana	alysis	Pre	servative
B1JK37		W	7-21-06	0920	1x1000-mL	_ P	906.0_H3_LSC: Tritiu	ım (1)		- Conto	None
B1JK37		w		1	1x20-mL F	>	Activity Scan	demoklamatikan meneral kenara ken			None
B1JK37		w		al de la company	2x4000-mL	_ G/P	I129LL_SEP_LEPS_0	GS_LL: I-129 (1)	HITPK		None
B1JK37		Tw		40	1x500-mL	Р	TC99_ETVDSK_LSC	: Tc-99 (1)			HCl to pH <2
B1JK37		w			1x500-mL	G/P	UTOT_KPA: Uranium	1 (1)			HNO3 to pH <2
								W			
		0		$\wedge \cap$							
Relinquished By DUR	ATEK (Prim	K.) (Va		Date/T	ime <i>/4:0</i> 7 2006	Received By Well	h S. Welch	Date/Time/4:00	Matrix	C* DS = Drum S

Date/Time SE = Sediment DL = Drum Liqui Relinquished By Date/Time Received By T = Tissue WI = Wine SO = Solid SI. = Shidge W = Water
O = Oil
A = Air I. = Liquid V = Vegetation X = Other Relinquished By Date/Time Received By Date/Time Relinquished By Date/Time Received By Date/Time FINAL SAMPLE Disposal Method (e.g., Return to customer, per lab procedure, used in process) Disposed By Date/Time

DISPOSITION

PNNL J6	6250	14	4		./.	CHAI	N OF	CUSTODY/	SA	AMPLE ANALYSIS	REQUEST	C.O.C.		6-007-	20
	QU	RAT	EK /	ND.	4970 -	Due 9	7-4-00	Co.]	Page <u>1</u>	of <u>1</u>	
Collector	300 G	U. W	AU.				Contact/Re	equester			Telephone No. 509-376-5056	MSIN	FAX		
SAF No. A06-007							Sampling (Hanford	Origin		Management A	Purchase Order/Chars	ze Code		***************************************	
Project Title	****		***************************************					rs- Sau	10	lot 109	Ice Chest No. RP C	7-3 -005 ^{Tem}	p.		
LLWMA(4)-PA. Shinned To (Lab)		no entre construction		200404920222222222	naczonyce o częska proprio isus synopolos		Method of	Shipment			Bill of Lading/Air Bill				
Severn Trent Inc. Protocol	ornorated, Ric	<u>hland</u>	Destrolations (Commented the Commented to Commented the Co	nencent versionele			Govt. Ve		orit	y : 45 Days	Offsite Property No.				-
Other POSSIBLE SAMP ** **	PLE HAZARI	OS/RE	MARKS		-				S	· · · · · · · · · · · · · · · · · · ·		Total Activity Ex SAFs into one SDG,			
Sample No.	Lab ID	*	Date		Time	No/Type	Container			Sample Analysis			Pres	ervative	
B1JK38		W	Thuk	Va .	0945	1x1000-m	L P	906.0_H3_LSC: Triti	tium	(1)	· · · · · · · · · · · · · · · · · · ·	Wat		None	
B1JK38		W	1/21/	74-1	1	1x20-mL	P	Activity Scan			100000000000000000000000000000000000000			None	
B1JK38		W				2x4000-m	iL G/P	I129LL_SEP_LEPS_	_GS	S_LL: I-129 (1)	19TPO		***************************************	None	
B1JK38		w		-		1x500-ml	. P	TC99_ETVDSK_LS0	C: T		7770			HCl to pH <	<2
B1JK38		W	V		V	1x500-ml	. G/P	UTOT_KPA: Uraniur	ım (1	1)				HNO3 to pl	H <2
	<u> </u>	<u> </u>			\		· · · · · · · · · · · · · · · · · · ·								
Relinquished By Relinquished By	Print N	λι	Val		CENTRAL CENTRAL CENTRAL CENTRAL	Date/	DDS Time	Received By Received By	ch	Sign Sign	Date/Time Date/Time Date/Time	S	enf	DS = Dru DL = Dru T = Tiss WI = Win L = Liau V = Veg	rm Lioui sue ne mid getation
Relinquished By						Date/	Time	Received By			Date/Time	A = Air		X = Oth	er er
FINAL SAMPLE DISPOSITION		Method	l (e.g., Retu	m to c	ustomer, per	lab procedur	e, used in proc	pess)		Disposed By		I	Date/Time		



Dat	te/Time Received:_	7.21.06 14	4:00		•
Clie	ent. PGU	1		NA [] RA	F#: A06-007 NA[
Wo	rk Order Number:_	166220144	Cháin	of Chate do "	P #: 7706 -00 7 NA [
Shij	pping Container ID	1	Air Bil	or castody.#	AUG-107-15, 17, 19, 21
1.	Custody Scals	on shipping containe	er into -40	u #	
2,		dated and signed?	or midely		NA[] Yes[] No[]
3.		ody record present?	•	,	NA[] Yes[] No[]
4,	Cooler temper:	affire			Yes [] Nol7
6.	Number of a	NA J	5:Vermicui	lite/packing m	Yes[] No[] aterials is NA-[] Wet[] Dr
		· · · · · · · · · · · · · · · · · · ·	tainer:		r Met (1 Dt
7.	Sample holding	g times exceeded?			74.53
8.	Samples have:			Γ	NA [] Yes [] No []
4	tape custody s	seals		hazard	Jaholo
9,	Samples are:			approp	riate samples labels
	in good con broken	ondition			
				leaking have air	m haay y y
10.	Sample pH taker	n?		(Omy for sam	ples requiring head space)
11.		() p.	, , , buss f	adjus	ted pH[]
	*For documentar	n, Sample Collector L tion only. No correct	isted? *		Yes [No []
12.	Were any anoma	lies identified in sam	nile regain 40	٠,	93 110[]
13,					Aea[] No []
		nomalies (include sam	iple numbers):		
<u> </u>					
Sample	Custodian:	Wileh	Da	te: 7.21	1.06 4/2
Çli	ent Sample ID	Analysis Requeste			-06 14:00
				Condition	Comments/Action
Client In	formed on	by	Pe	rson contacted	
[] No a	ction necessary; prod	cess as is,			
Project M	anager		Da	t e	
LS-023, 1	2/05, Rev. 6	,			

PNNL JG	5240	17	0		CHAI	N OF	CUSTOI)Y /:	SAMPLE AN	IALYS	SIS RE	QUEST		C.O.C		06-006-	-80
	W04	7 /	Due	9.7.0	6										Page 1	of <u>1</u>	
Collector K. L. YO						Contact/Re				·····		ephone No.	M	SIN	FAX		
SAF No.	SAMES					Dot Stew Sampling (09-376-5056 chase Order/C	harge Code				
S06-006						Hanford	Site			*******						***************************************	
Project Title SURV. JUNE 200	06					l bī	3-54U	15-	H104		lce	Chest No.	-442	Ten	ip.		-
Shinned To (Lab)		NO TO SERVICE STREET	***************			Method of	Shipment		7			of Lading/Air					
Severn Trent Inco Protocol	ornorated, Ric	hland		AND	AND THE PROPERTY OF THE PROPER	Govt. Ve	hicle				Off	site Property N	0.				
SURV POSSIBLE SAMPI		ODE	B.E.A. DOLCO			<u> </u>		Prio	ority: 45 Days			·····					
rosible samiri ** **	LE HAZARI	JS/KE	MARKS						SPECIAL INSTRUC Batch all PNNL GW san 14 days. Submit invoices & delive	ples submitted		'S", "I", "A" or "G	Total A	Activity Exonormal Section 1997	xemption: , not to exce	Yes M N ed SDG closu	vie of
Sample No.	Lab ID	*	Date	Time	No/Type	Container			S	ample Analy	lysis				Pres	servative	
B1J8L9		W	7-24-06	切ら	1x20-mL	Р	Activity Scan					1444				None	
B1J8L9		W	1/	- W	1x500-mL	G/P	UTOT_KPA: L	Jraniun	n (1)	Ž.	49WL	iL				HNO3 to p	DH <2
			V_								1102	7					
											W		***************************************				
													V-144				·
								·····									
	,			***************************************								5,444					
						-						····			***************************************		<u>*************************************</u>
											MC-24M-11			, ,			****
			***************************************			***************************************					,, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,, 			***************************************			PMM1
								~	· · · · · · · · · · · · · · · · · · ·			*****	**********		***************************************		
				<u> </u>	<u> </u>		<u>Ι</u>									<u>i</u>	<u> </u>
Relinquisted AATE			Sign		Date/I	ime 250	Received By	A	Primy /	Sign		Date/Time	20		Matrix	*	
K. J. YOUN Relinquished By		7	, ~ y				Received By	eles	US. Wel	ch	GENERAL STREET, STREET	2 4 2006 Date/Time	S SE SO SL W	= Soil = Sedime = Solid = Sludge = Water	ent.	DS = Dru DI = Dru T = Tiss WI = Wir I = Lian	um Liaui ssue ine
Relinquished By					Date/T	ime	Received By					Date/Time	O A	= Oil = Air			getation
Relinquished By					Date/T	ìme	Received By		WHO SEE THE SEE SEE SEE SEE SEE SEE SEE SEE SEE S			Date/Time	<u> </u>				
FINAL SAMPLE DISPOSITION	Disposal N	Method	(e.g., Return to	customer, per	lab procedure	, used in proce	l ess)		Dispo	sed By]	Date/Time		



	atc/Time Received	w_				•	
W	ork Order Number	:06624	40170	04970 NA	[] SAF#;	506-000	= NA []
	ipping Container I			Aming Of Cit	stody # 50	6-006-80	()
1.			ng container inte	Air Bill #			
2,	Custody Sea	ls dated and	ig container inte signed?	act?		[] Yes-[] No	
3.	Chain of Cus	tody record	Dresent?	•	NA	[] Yes[] No	[]
4.	Cooler tempe	rature:	NA[]	5:Vermiculite/pa	مادن	Yes [] No[[]
б.	Number of sa	mples in shi	pping container	: /	okung materi	als is NA [] W	⁷ et [] Dry [
7.	Sample holdi	ng times exc	eeded?			,	
8.	Samples have				HA F	Yes [] No []
9.	custody Samples are:in good					ls samples labels	
	broken				leaking	• -	
10.	Sample pH tak	en?]	NA[] pH<2[(Oldy)	have air bub for samples	requiring head	space)
11.	Sample Location*For document	n Samala C	1.11		adjusted p		
12.	*For document	alies identifi	ed in sample see	tion needed.		Yes[]No[)
13.	Description of a	nomalies (in	clude sample nu	umbers):		Yes[] No[]	-
		0					
Sample	Custodian:	1.W	elih	Date:	7720		
Çli	nt Sample ID	Analysi	s Requested		7.29	06 1	2:50
· · · · · · · · · ·		,	7-00.00	Condition	n	Comments/A	ction
lient Inf	ormed on	hy					
	ction necessary; pro		· · · · · · · · · · · · · · · · · · ·	Person cor	ntacted		
•	inager	 -					

PNNL J6	6240 WOL	17/	70	3.7-06	CHAIN OF	CUSTODY/	SAMPLE ANALYS	IS REQUEST		06-007-114 1 of 1
Collector & YOUN	<u>K</u>		1) PC 1		Contact/Re	equester		Telephone No.	MSIN FA	X
	7980				Dot Stew Sampling C			509-376-5056 Purchase Order/Charge	Code	
SAF No. W06-007					Hanford				Code	
Project Title						SAWS-HID	14	Ice Chest No.	Temp.	
RCRA, JULY 200 Shinned To (Lab)	06				Method of	Shinment		Bill of Lading/Air Bill N		
Corrows Twent Ince	ornorated. Ric	bland			Govt. Ve				•	
Protocol RCRA						Pric	ority: 45 Days	Offsite Property No.		
POSSIBLE SAMPI	LE HAZARI	OS/RE	MARKS		•		SPECIAL INSTRUCTIONS Batch all PNNL GW samples submitted 14 days. Submit invoices & deliverables to DL St	under "W", "S", "I", "A" or "G" 06 S.	Total Activity Exemptic AFs into one SDG, not to e	n: Yes V No xceed SDG closure of
Sample No.	Lab ID	*	Date	Time	No/Type Container		Sample Analys	sis]	Preservative
B1JLH3		W	7-24-06	1048	1x20-mL P	Activity Scan				None
B1JLH3		W	V		1x500-mL G/P	UTOT_KPA: Uraniur	n (1)	H9WMV		HNO3 to pH <2

<u></u>										
				general in			AL 134			
			4							
				la Typ			· •/	\$		
	1 - 53	<i>[</i>			106	ao		1964		
Relinquished By		71 - y	Sign		Date/Time 1966	Received By	Print Sign	Date/Time/ 254		trix *
Relinquished By					Date/Time	Received By		Date/Time	S = Soil SE = Sediment SO = Solid SL = Sludge W = Water	DS = Drim Solid DL = Drim Lioui T = Tissue WI = Wine L = Liouid
Relinquished By				-	Date/Time	Received By		Date/Time	O = Oil A = Air	V = Vegetation X = Other
Relinquished By					Date/Time	Received By		Date/Time		
FINAL SAMPLI DISPOSITION		Method	(e.g., Return to	customer, per	r lab procedure, used in proc	ess)	Disposed By		Date/Tir	ne



Wo Shi	pping Container ID:	4970 NA[] SAF#: W66-067 NA[] Chain of Custody # W06-067-114
1,		AITBIII#
2,	Custody Seals on shipping container intac Custody Seals dated and signed?	NA[] Yes-[] No[]
3.	Chain of Custody record present?	NA[] Yes [] No[]
4.	Cooler temperature: NALL	Yes []-No[]
6.	Number of samples in shipping container:	Yes [] No [] Vermiculite/packing materials is NA [] Wet [] Dry [
7.	Sample holding times exceeded?	
8.	Samples have:	NA [] Yes [] No []
9,	custody seals Samples are:in good conditionbroken	hazard labels appropriate samples labels leaking
10.	Sample pH taken? NA[] pH<2[]	have air bubbles (Only for samples requiring head space)
11.	Sample Location, Sample Collector Listed?* *For documentation only. No corrective acti	among htt []
12.	Were any anomalies identified in sample rece	sint?
13,	Description of anomalies (include sample nur	
- ‡	Q	
Sample	Custodian: Welch	Date: 7-24-06 12'5
Çlic	nt Sample ID Analysis Requested	70-30
	yww xwquesicu	Condition Comments/Action
:		
lient Info	prmed onby	Person contacted

									C.O.C.#	***************************************
PNNL ノム	0624	01'	73		CHAIN OF	CUSTODY/	SAMPLE ANALYSI	S REQUEST	:	W06-007-108
	ω_{o}	_/ / DATE:	(19 a)	ue C	7.7.06				Pa	ge <u>1</u> of <u>1</u>
Collector		i FO		,	Contact/R Dot Stev			Telephone No. 509-376-5056	MSIN	FAX
SAF No.					Sampling		**************************************	Purchase Order/Char	rge Code	
W06-007					Hanford	Site	SC 37 - 6	Y CI IN		
Project Title RCRA, JULY 20)06				lear	mk, Dis	1-SAWS-H109	Ice Chest No. 6Rf)-03-004 ^{emp.}	
Shinned To (Lab)	7//0				Methodof	Shipment		Bill of Lading/Air Bil		***************************************
Severn Trent Inc		hland			Govt. Vo		WAR STANDARD CO.			
Protocol RCRA						Pric	ority: 45 Days	Offsite Property No.		
POSSIBLE SAMP ** **	PLE HAZARI)S/RE	EMARKS		100		SPECIAL INSTRUCTIONS Batch all PNNL GW samples submitted ut 14 days. Submit invoices & deliverables to DL Ster		Total Activity Exer 6 SAFs into one SDG, no	nption: Yes No L
Sample No.	Lab ID	*	Date	Time	No/Type Container	1	Sample Analysis	***************************************		Preservative
B1JLH0		W	7/24/06	1309	1x20-mL P	Activity Scan				None
B1JLH0		W	V	V	1x500-mL G/P	UTOT_KPA: Uraniur	n (1)	H9WM5		HNO3 to pH <2
			*) Wa	00 1/24/06					
							7757-100		***************************************	
	\perp					<u> </u>	***************************************			
Relinquished By Relinquished By	Print	2	Sign	COMMUNICATION OF COMMUN	Date/Time 3442 2 4 2006 Date/Time	Received By	ch S. Welch	Date/Time/34. JUL 2 & 2006 Date/Time	S = Soil SE = Sediment SO = Solid SL = Sludge	T = Tissue $WI = Wine$
Relinquished By			***************************************		Date/Time	Received By	7711 144 - A. A. A. A. A. B. S. G. W. A. L. W. A. A. C.	Date/Time	W = Water O = Oil A = Air	I. = Liquid V = Vegetation X = Other
Relinquished By					Date/Time	Received By		Date/Time		
FINAL SAMPL		Method	l (e.g., Return to	customer, per	lab procedure, used in proc	cess)	Disposed By		Da	e/Time



Worl	k Order Number:	166	240173	Chain o	f Cristody	**************************************	06-007 N	₹A[]
Shipp	oing Container II			AIT Bill:	н Н	# 006	-007-108	
1,	Custody Seal	s on shipp	oing container in	itact?				
2,	Custody Scal	s dated an	d signed?			NA[]	Yes-[] No[]	
3.	Chain of Cus	ody recor	d present?	,		NA[]	Xes {] No[]	•
4.	Cooler tempe	rature:	NA LI	5:Varmin 11		7	[es [] No []	
6.	Number of sa	mples in s	hipping contain	el. \	₽packing r	materials i	s NA[] Wet[]] Dry [
7.	Sample holdin	g times ex	ceeded?			-	•	
8.	Samples have:						es[] No[]	
9,	Samples are:in good cbroken			· · · · · · · · · · · · · · · · · · ·		priate sam	ples labels	
10.	Sample pH take Sample Location *For documents	n Commut.	NA[] pH≤	-() pii-z[]	adju	ir bubbles mples requ usted pH [iring head space	<i>\$</i>)
12.	*For documenta Were any anoma	dies identi	No corrective	action needed.		Y	es-[] No[]	
13,	Description of ai	nomalies (ned in sample r include sample :	eceipt? numbers)		Ye	:s[] N o[]	
		n						
	ustodian:	· We	lik	Date:	7.24	1.0%	12:1/	
Çlient	Sample ID	Analy	sis Requested		dition	-00	10.70	
					2.0011		Comments/Action	
lient Inform	ned on	1						
f	on necessary; proc	-	У	Person	ontacted	,		

PNNL JG	6240 W049	189	5 1	e 9.7		CUSTODY/S	SAMPLE ANALYSI	S REQUEST	C.O.C. #	S06-007-2
Collector	DURA		100	~ , ,	Contact/Re				MSIN FAX	
SAF No.	R.R.I				Dot Stew Sampling O			509-376-5056 Purchase Order/Charge Co	de	
S06-007			, , , , , , , , , , , , , , , , , , , 		Hanford	Site	= 50:00 11:00	Ice Cheet No. / O A	O Tempi	
Project Title SURV, JULY 200)6						5-5AWS-H109	Ice Chest No. 6RP-0	3-069	
Shinned To (Lab)	zapionecimiento entremiento en	endonomentom			Method-of Govt. Ve			Bill of Lading/Air Bill No.	/	
Severn Trent Inco Protocol	rnorated, Kic	niana	escessionne i soni en i con escenario de misioni de misioni de de		GOVI. VE		rity: 45 Days	Offsite Property No.	······································	
SURV POSSIBLE SAMPI ** **	LE HAZARD	OS/RE	MARKS				SPECIAL INSTRUCTIONS	under "W", "S", "I", "A" or "G" 06 SAFs	Activity Exemption: into one SDG, not to exc	
Sample No.	Lab ID	*	Date	Time	No/Type Container		Sample Analysi	is	Pre	eservative
B1JL17		w	7/24/06	1268	1x20-mL P	Activity Scan				None
B1JL17		W	1/1	V	3x1000-mL P	TRITIUM_ELECT_LS	SC_LL: H-3 (1)	9WWV		None
							•			
							,			
					00					
			De	W	1/24/0/2					
***************************************			(/ \		* 1		A. AAHAWAA			
Relinquished By DURATEK R. R. FOX Relinquished By Relinquished By	Print		Sign	CCCCOADA CASSICAS CASSICAS CASSICAS	Date/Time Date/Time Date/Time	Received By Received By	Print Welch	Date/Time/3 45 Date/Time Strong Date/Time O Date/Time O	= Soil E = Sediment D = Solid C = Sludge V = Water E Oil	DS = Drum Solid DL = Drum Limi T = Tissue WI = Wine L = Limid V = Vegetation
Relinquished By					Date/Time	Received By		Date/Time	= Air	X = Other
FINAL SAMPLI DISPOSITION	E Disposal l	Method	l (e.g., Return to	customer, per	lab procedure, used in proc	eess)	Disposed By		Date/Time	

						***************************************			C.O.C.#	***************************************		
PNNL J66240185 CHAI W04970 Due 9.7.06						IN OF CUSTODY/SAMPLE ANALYSIS REQUEST				S06-007-54		
	W049	'70	Due?	9.7.06	,				Page	<u>1</u> of <u>1</u>		
Collector	DURZ R. R.				Contact/ Dot St	Requester	Telephone No. 509-376-5056	MSIN FA	X			
SAF No.		- C-2-73			Samplin	g Origin	Purchase Order/Charge	Code				
S06-007 Project Title					Hanfo	book! DTS-	Ice Chest No. 6RP-63 Temp.					
SURV. JULY 200 Shinned To (Lab))6				Mathed	book! DTS-	Bill of Lading/Air Bill No.					
Severn Trent Inco	morated, Ric	hland				Vehicle						
Protocol SURV						Prio	rity: 45 Days	Offsite Property No.				
POSSIBLE SAMPI ** **	LE HAZARD	S/RE	MARKS				SPECIAL INSTRUCTIONS Ho Batch all PNNL GW samples submitted under 14 days. Submit invoices & deliverables to DL Stewar	r "W", "S", "I", "A" or "G" 06 S	Total Activity Exemptic AFs into one SDG, not to e	on: Yes V No xceed SDG closure of		
Sample No.	Lab ID	*	Date	Time	No/Type Containe	er	Sample Analysis		Preservative			
B1JL19		W	7/24/06	1041	1x20-mL P	Activity Scan		***************************************	Ale and the second seco	None		
B1JL19		W	7		3x1000-mL P	TRITIUM_ELECT_LS	SC_LL: H-3 (1) H9W	WW		None		
\												
						*-						
				2000	02 126		100					
				K.W	7129106							
								1 22242				
						**************************************		With the state of				
							4.44 · · · · · · · · · · · · · · · · · ·					
			W									
			<u> </u>			0	No. of the state o					
				L								
Relinquis bod RATE A	Print	X	Sign	COMMAN A	Date/Time/3	4 Received By	MPrint S. Weld JUL 2	Date/Time /3 4 2006		trix *		
Relinquished By	1	V			Date/Time	Received By		Date/Time	S = Soil SE = Sediment SO = Solid SL = Sludge W = Water	DS = Drim Solid DL = Drim Liqui T = Tissue WI = Wine L = Liquid		
Relinquished By					Date/Time	Received By		Date/Time	O = Oil A = Air	V = Vegetation X = Other		
Relinquished By			***************************************		Date/Time	Received By		Date/Time				
FINAL SAMPLI DISPOSITION	Disposal N	Method	(e.g., Return to	customer, per	lab procedure, used in p	rocess)	Disposed By		Date/Tir	ne		

PNNL JG G	240 WO	18	5 370 Du	u 9.7		CUSTODY/S	SAMPLE ANALYSIS F	REQUEST	C.O.C.#	S06-007-55		
Collector	RRR	X			Contact/Re			Telephone No.	MSIN	FAX		
SAF No.			.,		Dot Stew Sampling C	art Prigin // () 1	7129/06	509-376-5056 Purchase Order/Charge	Code			
S06-007					Hanford S	Site Site.						
Project Title SURV, JULY 2006					Loab	OCK GRT	DTS-SAWS-H109	Ice Chest No. GRP-63-05-mb.				
Sh <u>inned To (Lah)</u>	antamoristi vaiti mistori	innomination content	aleman politica de la companya de l	and the second desired the second	Method of			Bill of Lading/Air Bill No.				
Severn Trent Incorna Protocol	orated, Rich	iland	an a	tamanan da anakan da kanakan da anakan d	Govt. Ve		rity: 45 Days	Offsite Property No.				
SURV POSSIBLE SAMPLE ** **	HAZARD	S/REI	MARKS			FIIO		W", "S", "I", "A" or "G" 06 SA	Total Activity Exemp AFs into one SDG, not t	otion: Yes No o exceed SDG closure of		
Sample No.	Lab ID * Date Time No/Type				No/Type Container	er Sample Analysis				Preservative		
B1JL20		w	m bulala	0830	1x20-mL P	Activity Scan				None		
B1JL20		w	1/24/00 V	<i>V</i>	3x1000-mL P	TRITIUM_ELECT_LS	SC_LL: H-3 (1) H9WWX			None		
				D.W	2/24/24							
					1110							
						MILLS 14 14 14 14 14 14 14 14 14 14 14 14 14						
						_						
		Ų	\wedge	<u> </u>	<u>.</u>	\Box	· · · · · · · · · · · · · · · · · · ·					
Relinquished By Print Sign Date/Time DURATEK R. R. POX JUL 2 4 200						J. Welch S. Welch JUL 24 2006 S = Soil			Matrix * DS = Drum Solid			
Relinquished By	0	U			Date/Time *					DI. = Drum Lioni T = Tissue WI = Wine L = Lionid		
Relinquished By					Date/Time	Received By		Date/Time				
Relinquished By					Date/Time	Received By		Date/Time				
FINAL SAMPLE DISPOSITION										Time		



Da	ite/Time Received:	7-24-06 13:4	15	•
	ient: Pou		_	,
Wo	ork Order Number:	166240385 166240185	NA[] SA	F#: <u>506-007</u> NA[]
Shi	pping Container ID	J66240185	or Custody #	SOG-007-2,54,55
I.		on shipping container in	VIL B111 #	
2,	Custody Scale	dated and signed?		NA[] Yes[] No[]
3.	Chain of Cust	ody record present?	•	NA[] Yes[] No[]
4.	Cooler temper	ature: NA []	537	Yes[]No[]
6.	Number of san	oples in shipping containe	o.vermiculite/packing m	Yes [] No [] naterials is NA [] Wet [] Dry
7.	Sample holdin	g times exceeded?		•
8.	Samples have:tape			NA [] Yes [] No []
	custody s	cals	hazardhazard	labels
۶.	Samples are:			riate samples labels
	m good c	ondition	leaking	
	•		have	- L. y v -
10.	Sample pH taker	n? NA[] pH<2	() -XI-OC-	ples requiring head space)
11.	Sample Location	Sample O. H.	adjus	ted pH[]
	*For documentat	ion only. No corrective a	? * ction needed	Yes[] No[]
12.	Were any anoma	lies identified in sample re	ani-40	-40[] 140[]
13,	Description of an	omalies (include sample n	umbere).	Yes [] No[]
Sample	Custodian:	(1)		
·		Well	Date: 7-24	1.06 13:45
Çhe	nt Sample ID	Analysis Requested	Condition	
-				Comments/Action
lient Take	ormed or			
	ormed on		Person contacted_	
•	nager			
	/05, Rev. 6		Date	

PNNL J	6624 W04	019	10	7.06	CHAIN OF	CUSTODY/S	SAMPLE ANALYSIS	REQUEST		06-049-14 1 of 1
Collegio P. CO	NNOLLY		<i>70</i> 4 /		Contact/Re			Telephone No.	MSIN FAX	
SAF No.					Dot Stew Sampling (509-376-5056 Purchase Order/Charge	Code	
I06-049 Project Title					Hanford		a de la pro-	Ice Chest No.	Temp.	
2ZP1-LOL JULY	7 2006		,			SAWSA	7 106	Sm154	5	
Shinned To (Lab) Severn Trent Inc	ornorated. Ric	hland			Method of Govt. Ve			Bill of Lading/Air Bill N	0.	
Protocol CERCLA	400-443-44-200112000000000000000000000000000000		ELECTRICAL CRESCOLOGICAL CONTRACTOR CONTRACT	~		Prio	ority: 45 Days	Offsite Property No.		
POSSIBLE SAMP	PLE HAZARI	OS/RE	MARKS				SPECIAL INSTRUCTIONS Batch all PNNL GW samples submitted und 14 days. Submit invoices & deliverables to DL Stews	der "W", "S", "I", "A" or "G" 06 SA	Total Activity Exemption AFs into one SDG, not to exc	
Sample No.	Lab ID	*	Date	Time	No/Type Container		Sample Analysis		Pro	eservative
B1JKW9	The Charles of the Control of the Co	W	7.2406	1039	1x20-mL P	Activity Scan	With the second			None
B1JKW9		W	1		1x500-mL P	TC99_ETVDSK_LSC	D: Tc-99 (1)			HCl to pH <2
B1JKW9		W			1x1000-mL P	906.0_H3_LSC: Tritio	um (1)	HUWO	W. 10.4 11.5 11.4 11.4 11.4 11.4 11.4 11.4 11	None
B1JKW9		W			2x4000-mL G/P	I129LL_SEP_LEPS_	GS_LL: I-129 (1)			None
B1JKW9		W	A	L	3x1000-mL G/P	SRISO_SEP_PRECI	P_GPC: Sr-90 (1)			HNO3 to pH <2
								,		
					3.1.1					
Relinquished By D. P. CONN Relinquished By	IOLLY Print	4	Sign	2	Date/Time/4)/4 2 4 2006 Date/Time	Received By Received By	Welch JUL	Date/Time /2424/ 2 4 2006 Date/Time	Matri S	DS = Drum Solid DL = Drum Liqui T = Tissue WI = Wine L = Liquid
Relinquished By					Date/Time	Received By		Date/Time	O = Oil A = Air	V = Vegetation X = Other
Relinquished By			***************************************	4	Date/Time	Received By		Date/Time		
FINAL SAMPL DISPOSITION		Method	(e.g., Return to	customer, per	lab procedure, used in proc	ess)	Disposed By		Date/Time	



", [] OAF#;
004970 NA[] SAF #:NA[] Chain of Custody #
7-14 DIII #
act?
NA[] Yes[] No[]
NA[] Yes[] No[]
Yes [] No [] 5. Vermiculite/packing materials is NA [] Wet [] Dry
5: Vermiculite/packing materials is NA+ Wet [] Dry
:
NA [] Yes [] No []
hazard labels appropriate samples labels
leaking have air bubbles
(Omy for samples require
J PIL-Z adinated
*
tion needed. Yes[] No[] ceipt?
ımbers):
Date: 72411 11/11/0
106 14.40
Condition Comments/Action
Person contacted
- Somacica
Date

PNNL JG	,624 WO40	019	77	9.7.00	CHAIN OF	CUSTODY/SAMI	PLE ANALYSIS	S REQUEST		.06-007-11 1 of 1
Collector CON			140	/ / O ×	Contact/Re				ISIN FAX	
U. M. UUN SAF No.					Dot Stew Sampling (509-376-5056 Purchase Order/Charge Cod	e	
A06-007 Project Title					Hanford			Ice Chest No.	Temp.	
LLWMA(4)-PA.				***************************************		SAWS 4106		Ice Chest No SML 545	i cing.	
Shinned To (Lab) Severn Trent Inc		hland			Method of Govt. Ve			Bill of Lading/Air Bill No.		
Protocol Other			ON THE PROPERTY OF THE PROPERT		00000000000000000000000000000000000000	Priority: 45	Days	Offsite Property No.		
POSSIBLE SAMP ** **	PLE HAZARI	DS/RE	EMARKS			Batch all 14 days.	PNNL GW samples submitted ur	der "W", "S", "I", "A" or "G" 06 SAFs in	Activity Exemption nto one SDG, not to ex	n: Yes 🗹 No 🗀
Sample No.	Lab ID	*	Date	Time	No/Type Container		Sample Analysis		P	reservative
B1JK33		w	7-24-06	1146	1x1000-mL P	906.0_H3_LSC: Tritium (1)				None
B1JK33		w	1	1	1x20-mL P	Activity Scan		49 WW5		None
B1JK33		w			2x4000-mL G/P	I129LL_SEP_LEPS_GS_LL: I-1		77000		None
B1JK33		w			1x500-mL P	TC99_ETVDSK_LSC: Tc-99 (1))	* *		HCl to pH <2
B1JK33		W	+	V	1x500-mL G/P	UTOT_KPA: Uranium (1)				HNO3 to pH <2
								-		
							\bigcirc			-
Relinquished By D. D. CONN Relinquished By	Print	6	Sign		2 4 2006 Date/Time	Received By Pri	int Sign Sign Welchmin	Date/Time /145 40 2 4 2006 S Date/Time SE	Matr = Soil = Sediment	ix * DS = Drum Solid DL = Drum Liqu
z z z z z z z z z z z z z z z z z z z			/		Date Time	,		SO SI W		T = Tissue WI = Wine I = Liquid
Relinquished By		7			Date/Time	Received By	termina the mineral	Date/Time O A	= Water = Oil = Air	V = Vegetation X = Other
Relinquished By					Date/Time	Received By		Date/Time		

FINAL SAMPLE DISPOSITION

Disposal Method (e.g., Return to customer, per lab procedure, used in process)

Disposed By

Date/Time



Client: Pow SDG#: W04970 NA[] SAF#: A06-607 Work Order Number: 16624097 Chain of Custody # A06-607-11	_NA[]
1. Custody Scals on shipping container intact?	
2. Custody Seals dated and signed? NA[] Yes [] No[]
3. Chain of Custody record present? NA [] Yes [] No [٦ .
4. Cooler temperature: NA [] 5:Vermiculite/packing materials is NA [] Wes [] No [] 6. Number of samples in shipping container: 1]
6. Number of samples in shipping container:	t[]Dry[]
7. Sample holding times exceeded?	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
8. Samples have: tape NA ff Yes [] No []	
custody seals hazard labels samples are: fin good condition broken hazard labels labels	
10. Sample pH taken? NA[] pH<2[] The sample sequiring head sp	² 4cc)
11. Sample Location, Sample Collector Listed? * *For documentation only. No.	,
12. Were any anomalies identified in sample receipt?	
13. Description of anomalies (include sample numbers): Yes [] No[]	
Sample Custodian: A. Wellh Date: 724.06 141	
Client Sample ID Analysis Requested Condition	40
Comments/Acti	on
Client Informed on by	
[] No action necessary; process as is.	
Project Manager	
LS-023, 12/05, Rev. 6	

PNNL)6	6256296
	W04970
	001110

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

c.o.c.	#	
	W06-007-	138

	W04	770	Du	e 9-8.			PIRIVER EIRI IRI VIREI E	200 (020 1	Page 1	of <u>1</u>		
Collector R.T.	SICKLE	5 5			Contac	ct/Requester						
SAF No.	···				Sampli	Stewart ing Origin	A CONTRACTOR OF THE CONTRACTOR		509-376-5056 Purchase Order/Charge Code			
W06-007 Project Title					Hanf	ford Site	1	Ice Chest No.	est No Temp			
RCRA, JULY 20	006					DTJ-SAWJ	- H106		ce Chest No. 5ML 595 Temp.			
Shinned To (Lab) Severn Trent Inc	ornorated. Ric	hland				d of Shipment t. Vehicle		Bill of Lading/Air Bill No.	Bill of Lading/Air Bill No.			
Protocol RCRA	kata kanada kata ana kanada kanad	alug estenito no	Actor (Color de Salande) de Profesio (Color de Salande) de Salande (Salande) de Salande (Salande) de Salande (rity: 45 Days	Offsite Property No.				
POSSIBLE SAMP	LE HAZARI	S/RE	EMARKS				SPECIAL INSTRUCTIONS Batch all PNNL GW samples submitte 14 days. Submit invoices & deliverables to DL	ed under "W", "S", "I", "A" or "G" 06 SAFs	Activity Exemption: into one SDG, not to exce			
Sample No.	Lab ID	*	Date	Time	No/Type Contain	ner	Sample Anal	ysis	Pre	eservative		
B1JLJ5		W	7.25-06	1353	1x20-mL P	Activity Scan				None		
B1JLJ5		W	1.		1x500-mL G/P	UTOT_KPA: Uranium	1 (1)	H901A		HNO3 to pH <2		
Dath. orderh as Do @ 3	Rink				Date/Tidkf	Received/by	Print Sign	Date/Time	Matrix			
Relinquished By		<u>//</u>	Sign			106 A Well Received By	D. Delch	JUL 2 5 2006 S.	= Soil E = Sediment D = Solid E = Sludge	DS = Drum Solid DI = Drum Liqui T = Tissue WI = Wipe		
Relinquished By					Date/Time	Received By		Date/Time W O A	= Oil	I. = Limid V = Vegetation X, = Other		
Relinquished By					Date/Time	Received By		Date/Time				
FINAL SAMPL DISPOSITION		Method	l (e.g., Return to	customer, per	lab procedure, used in	ı process)	Disposed By	,	Date/Time			

PNNL	1663 W	250 J 490	196	Duo	. 9.	CHAI 8.06	N OF (CUSTOD	Y/S	SAMPL	E ANAI	LYSIS F	REQUEST		C.0	W0	6-007-1	32
Collector	R.T. SIG	3KLE					Contact/Re		-	, , , , , , , , , , , , , , , , , , , ,			Telephone No.		MSIN	FAX		
SAF No.	,	50 Gazaza					Dot Stew: Sampling O		***************************************				509-376-5056 Purchase Order		Code			
W06-007 Project Title					-ti-ti-		Hanford S		****	. /			Ico Chost No.		COL T	emp.		
RCRA, JU	Л <u>. Y 2006</u>							75-5AW	7-1	4106			Ice Chest No. 5			CHID.		
Shinned To Severn Tr	(Lab) ent Incorporat	ed Richla	nd	niis iliyaayay kaaniniikhalaayayida			Method of S Govt. Vel						Bill of Lading/A	Air Bill N	0.			
Protocol		siahsini menerakan seletah persionah	deline consumera consistencia del			attanamentari peresi entrekeninenniamid			Prior	rity: 45 Day:	3		Offsite Propert	v No.				
RCRA POSSIBLE	SAMPLE HA	ZARDS/I	REMARI	S						SPECIAL IN Batch all PNN 14 days.	STRUCTION L GW samples s		Time W", "S", "I", "A" or PNNL	"G" 06 SA	Total Activity AFs into one SI	Exemption: OG, not to exc	Yes 🗹 1 eed SDG closu	No Lire of
Sample	No. La	D .	* Da	ite	Time	No/Type	Container				Sample	e Analysis				Pre	eservative	
B1JLJ2	**************************************	V	v ا	-06	1246	1x20-mL	Р	Activity Scan		(2000)							None	
B1JLJ2		V			1	1x500-mL	. G/P	UTOT_KPA: Ur	ranium	(1)		H	901D		- APP-00-2-0		HNO3 to	oH <2
Relinquished Relinquished	SICKLE	Print				Date/	Time (2008	Received By		Print	Sig	ilch	Date/Time Date/Time	2006	S = Soi SE = Sec SO = Sol SL = Slu	liment id	DS = Dr	
Relinquished	-					Date/		Received By					Date/Time		W = Wa O = Oil A = Air		$ \begin{array}{rcl} I_{\cdot} &=& \text{Lie} \\ V &=& \text{V} \\ X &=& \text{Ot} \end{array} $	getation
Relinquished	Ву					Date/	Time	Received By					Date/Time					
FINAL SA DISPOSI		sposal Metl	nod (e.g., R	etum to cu	stomer, per l	ab procedure	e, used in proce	ess)			Disposed B	зу				Date/Time		



Da	atc/Time Received: 7.25.06	14.20
	· · · · · · · · · · · · · · · · · · ·	
Wo	ork Order Number: 16 62500 96	: W04970 NA[] SAF#: W06 007 NA[]
Shi	pping Container ID:	of Custody # W06-007-138, 13
1,	Custody Seals on shipping containe	Air Bill #
2,	Custody Seals dated and signed?	NA[] Yes-[] No[]
3.	Chain of Custody record present?	NA[] Yes[] No[]
4.	Cooler temperature: NA-	Yes-[-] No []
6.	Number of samples in shipping cont	Yes.[] No [] 5: Vermiculite/packing materials is NA [] Wet [] Dry tainer:
7.	Sample holding times exceeded?	
8.	Samples have:tape	NA[] Yes[] No[]
	custody seals	hazard labels
9,	Samples are:in good condition	appropriate samples labels
	broken	leaking
10,	Sample pH taken? NAII no	have air bubbles (Only for samples requiring head space)
11.	(j. pi.	2 Jan
11.	Sample Location, Sample Collector Lie *For documentation only. No correction	
12.	Were any anomalies identified in samp	ile receipt?
13,	Description of anomalies (include samp	
Sample	Custodian: Welch	
Çliç	nt Sample ID Analysis Requested	Date: 7-25-06 14:20
		Condition Comments/Action
		VIII)
Client Info	pimed on by	Percon cont
[] No ac	tion necessary; process as is,	Person contacted
•	nager	Deta
LS-023, 12	105, Rev. 6	Date

PNNL	166-250319
	W04970

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. #

S06-007-73

9-8-06 of Collector R. I. SICKLE Contact/Requester Telephone No. MSIN FAX 509-376-5056 Dot Stewart Purchase Order/Charge Code SAF No. Sampling Origin S06-007 Hanford Site Ice Chest No. SML 595 Proiect Title Temp. DTS-5AW= 4106 SURV, JULY 2006 Shinned To (Lah) Method of Shipment Bill of Lading/Air Bill No. Severn Trent Incorporated, Richland Govt. Vehicle Protocol Offsite Property No. Priority: 45 Days SURV POSSIBLE SAMPLE HAZARDS/REMARKS SPECIAL INSTRUCTIONS **Hold Time** Total Activity Exemption: Yes V No Batch all PNNL GW samples submitted under "W", "S", "I", "A" or "G" 06 SAFs into one SDG, not to exceed SDG closure of Submit invoices & deliverables to DL Stewart, PNNL Lab ID Sample No. Date Time No/Type Container Sample Analysis Preservative B1JLD3 W 1x20-mL P Activity Scan None 7-25-06 1001 B1JLD3 W 3x1000-mL P TRITIUM ELECT LSC LL: H-3 (1) None B1JLD3 W 1x1000-mL P 9310 ALPHABETA GPC: Alpha + Beta (2) HNO3 to pH <2 B1JLD3 W 2x4000-mL G/P 1129LL SEP LEPS GS LL: 1-129 (1) None B1JLD3 W 1x4000-mL G/P GAMMALL GS: List-1 (9) HNO3 to pH <2 B1JLD3 W 1x1000-mL G/P UISO PLATE AEA: List-1 (3) HNO3 to pH <2 Date/Time Received/By Relinquished By Matrix * R.T. SICKLE 2 5 2006 = Soil = Drum Solid = Sediment Relinquished By Date/Time Received By = Drum Liqui Date/Time = Solid = Tissue = Sludge = Wine = Water = Lionid Relinquished By Date/Time Received By Date/Time = Oil = Vegetation = Air = Other Relinquished By Date/Time Received By Date/Time FINAL SAMPLE Disposal Method (e.g., Return to customer, per lab procedure, used in process) Disposed By Date/Time DISPOSITION

PNNL U	,625 W04	103 97	19	9-0	CHAIN OF	CUSTODY	/SAMPLE ANAL	LYSIS REQUEST	C.O.C.# S0 Page 1	6-007-72
Conector			Nul	1-8	Contactin				SIN FAX	01 <u>1</u>
SAF No.	.SICKL	-	***************************************	······································	Dot Ster Sampling			509-376-5056 Purchase Order/Charge Code		
S06-007 Project Title					Hanford		:/ : !	Ice Chest No. SML-593	Temp.	
SURV. JULY 20 Shipped To (Lab)	06					D75-5AWS	- H 106	Bill of Lading/Air Bill No.)	
Severn Trent Inc.	ornorated. Ric	hland			Govt. V					
Protocol SURV						Pri	ority: 45 Days	Offsite Property No.		
POSSIBLE SAMP ** **	LE HAZARI	DS/RE	EMARKS				SPECIAL INSTRUCTION Batch all PNNL GW samples su 14 days. Submit invoices & deliverables t	abmitted under "W", "S", "I", "A" or "G" 06 SAFs int	Activity Exemption: o one SDG, not to exceed	Yes ♥ No Ld SDG closure of
Sample No.	Lab ID	*	Date	Time	No/Type Container		Sample	Analysis	Prese	ervative
B1JLD2		W	7-25-0	6/00/	1x20-mL P	Activity Scan				None
B1JLD2		W	,		3x1000-mL P	TRITIUM_ELECT_L	LSC_LL: H-3 (1)			None
B1JLD2		w			1x1000-mL P	9310_ALPHABETA	_GPC: Alpha + Beta (2)	H9012		HNO3 to pH <2
B1JLD2	1	W			2x4000-mL G/P	I129LL_SEP_LEPS	_GS_LL: I-129 (1)	31,		None
B1JLD2		w	1 1		1x4000-mL G/P	GAMMALL_GS: Lis	t-1 (9)	V 100 (100 (100 (100 (100 (100 (100 (100		HNO3 to pH <2
B1JLD2		W		1	1x1000-mL G/P	UISO_PLATE_AEA	: List-1 (3)			HNO3 to pH <2
WHITE COLOR OF THE		<u> </u>					, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			
		-								•
***************************************							رين و معمول و مواد دان و د			***************************************
***************************************		1								
		+								
	1		<u> </u>		111-	'//		101	L	
Relinquished By Relinquished By	Print				Date/Time 7 & Date/Time 7 & Date/Time 7 & Date/Time	Received By Received By	elch S. We	Date/Time Selection Select		DS = Drum Sol DL = Drum Lia
							:	SO SI. W	= Water I	T = Tissue WI = Wine L = Liquid
Relinquished By					Date/Time	Received By		Date/Time O A		V = Vegetatio X = Other
Relinquished By				··········	Date/Time	Received By	***************************************	Date/Time		

Disposed By

Date/Time

FINAL SAMPLE DISPOSITION

Disposal Method (e.g., Return to customer, per lab procedure, used in process)



pampie	Check-in List
Date/Time Received: 7.25.06 14	1:20
	04970 NA[] SAF#; SO6-007 NA[]
Work Order Number: 16 6-250319	NA[] SAF#; SO6-007
Shipping Container ID:	1004 # 006-007-73 77
	Air Bill #
1. Custody Seals on shipping container inta	net?
oustody Beals dated and signed?	NA[] Yes [] No[]
3. Chain of Custody record present?	NA[] Yes[] No[]
4. Cooler temperature: NA 1	S'Verminalia Yes [] No []
6. Number of samples in shipping container:	Yes [] No [] 5: Vermiculite/packing materials is NA [] Wet [] Dry []
7. Sample holding times exceeded?	Janet [] Dry []
8. Samples have:tape	NA[] Yes[] No[]
custody seals	hazard labels
9. Samples are:in good conditionbroken	appropriate samples labels leaking
	have
10. Sample pH taken? NAI] PHOTO	
p11 2 /	
11. Sample Location, Sample Collector Listed? *For documentation only. No corrective active	*
12. Were any anomalia	ion needed. Yes [] No[]
12. Were any anomalies identified in sample rece	eipt?
13. Description of anomalies (include sample nur	Mbers):
Sample Custodian:	
- O-CUCh/	Date: 7.25.06 14.20
Client Sample ID Analysis Requested	Condition Condition
	Comments/Action
Client Informed onby	Person contacted
] No action necessary; process as is,	THE STATE OF THE S
roject Manager	
S-023, 12/05, Rey. 6	Date
•	

PNNL J6	6250 WOL	33 2 49 1	22 70 Due	9.	8.0	7	CHAI	N OF (CUSTODY/S	SAMPLE ANALY	YSIS F	REQUEST		C	Page	06-008-	
Collector	L. D. WAI	33						Contact/Re				Telephone No.		MSIN	FA	λX	
	L. D. VVA							Dot Stew Sampling C		,		509-376-5056 Purchase Order		Code			
W06-008														Couc			
Project Title								logh	WY DIS.	-SAWS-H109		Ice Chest No.	PD.	N 3-	Temn.		
RCRA, AUGUS' Shinned To (Lab)	<u> 2006 </u>							Method of		011003 11101		Bill of Lading/A		<u>-0 </u>	007		
Severn Trent Inc.	ornorated, Ric	hland						Govt. Ve				Din of Lauring 21					
Protocol							Market Andreas Control of Control		Prio	rity: 45 Days		Offsite Property	No.				
RCRA POSSIBLE SAMP ** **	LE HAZARD	S/RE	MAR	KS					<i>h</i>	SPECIAL INSTRUCTIONS Batch all PNNL GW samples subm 14 days. Submit invoices & deliverables to I	mitted under "	, , ,				on: Yes 🗹 exceed SDG clos	
Sample No.	Lab ID	*	D	ate	T	ime	No/Type	: Container		Sample Ar	nalysis					Preservative	
B1K2H2		w	0/2	6/0 6	10	15	1x20-mL		Activity Scan			: · · · · · · ·	None				
B1K2H2		W	11/2	9/00	(D-1	1-2	1x125-ml		906.0_H3_LSC: Tritio	um (1) H900	12		None				
B1K2H2		w	\vdash		 		1x1000-m		GAMMALL_GS: List-	71 100	<i>7'0</i> \		HNO3 t	o pH <2			
B1K2H2		W	\vdash				1x250-ml										
				9	_		1x1000-m							o pH <2			
B1K2H2		W	~		- 5	<u> </u>	121000-11	il. F	3010_ALITIABLIA_	Or C. Alpira - Deta (2)			111001	——————————————————————————————————————			
Relieiquished by	Pyint	<u> </u>	- n	P ies (\		Date/	Time 142	Received By	g Print Sign		Date/Time	140	5	Ma	atrix *	
Relinquished By Relinquished By	To h	<u>)</u>	Ua —			Common Co	Date/	7006 Time	Received By Received By	Print Sign Welch	2 / 100	Date/Time	176	SE = SO = SI. = W =	Soil Sediment Solid Sludge Water Oil	DI. = D T = T WI = W I. = I.	Orum Solid Orum Liqui Sissue Vine Jauid Vegetation
remiquished by							1,7416/	. AIR	i i i i i i i i i i i i i i i i i i i			Date/Tille			Air	X = C	

Received By

Date/Time

Disposal Method (e.g., Return to customer, per lab procedure, used in process)

Date/Time

Date/Time

Disposed By

Relinquished By

FINAL SAMPLE

DISPOSITION



Date/Time Received: 72506 142	er-m rist
Client PGW SDG# (4) 04	770 NA[] SAF#: W0.6-008 NA[]
Work Order Number: 16 6-250322	NA[] SAF#: WO.6-008
Shipping Container ID.	11-25-11-000-130
I. Custody Scals on shipping container intact?	Air Bill #
2. Custody Seals dated and signed?	NA[] Yes[] No[]
3. Chain of Custody record present?	NA[] Yes[] No[]
4. Cooler temperature: NA [] 5.V.	Yes [] No []
6. Number of samples in shipping container:	Yes []-No [] rmiculite/packing materials is NA []-Wet [] Dry []
7. Sample holding times exceeded?	
8. Samples have:tape	NA.[] Yes [] No[]
custody seals	hazard labels
9. Samples are:in good condition	appropriate samples labels
broken	leaking
10. Sample pH taken? NA[] pH2[]	have air bubbles (Only for samples requiring head space)
NA[] pH<2[]pH	[>2.[] adjusted pH[]
Sample Location, Sample Collector Listed? **For documentation only. No corrective action r	
12. Were any anomalies identify to	reeded. Yes[] No[]
12. Were any anomalies identified in sample receipt?13. Description of anomalies (include sample number)	Yes[] No-f]
The state of the s	s):
Sample Custodian:	
	_Date: 7-25.06 14:3=
Client Sample ID Analysis Requested	Condition
	Comments/Action
Client Informed on by	
[] No action necessary; process as is.	Person contacted
Project Manager	Data
LS-023, 12/05, Rev. 6	Date

PNNL J 6	6250 WO	3:	24 70 D	ee 9-9	CHAIN OF	CUSTODY/	SAMPLE ANALYS	IS REQUEST	C.O.C.#	S06-007-64			
Collector					Contact/Re			Telephone No.	Telephone No. MSIN FAX				
SAF No.					Dot Stew Sampling (509-376-5056 Purchase Order/Charge Code				
S06-007				·····	Hanford	Site							
Project Title SURV, JULY 20	06				07	5-SHWS-	4104	Ice Chest No. SML	Ice Chest No. SML-442 Temp.				
Shinned To (Lab)		niministration			Method of	Shipment		Bill of Lading/Air Bill N	Bill of Lading/Air Bill No.				
Severn Trent Inco Protocol	ornorated, Ric	hland	<u>LUÇULZAÇON ANTONIO DO DE LO CONTRACTOR DE C</u>		Govt. Ve		ority: 45 Days	Offsite Property No.					
SURV POSSIBLE SAMP ** **	LE HAZARI	DS/RE	EMARKS				SPECIAL INSTRUCTIONS Batch all PNNL GW samples submitted 14 days. Submit invoices & deliverables to DL St	under "W", "S", "I", "A" or "G" 06 Sa	Total Activity Exempti AFs into one SDG, not to	ion: Yes 🗹 No exceed SDG closure of			
Sample No.	Lab ID	*	Date	Time	No/Type Container		Sample Analys	sis		Preservative			
B1JLC7		W	7-25-06	0650	1x1000-mL P	906.0_H3_LSC: Triti	um (1)			None			
B1JLC7		w	V	1	1x20-mL P	Activity Scan		H903K	**************************************	None			
***************************************									, , , , , , , , , , , , , , , , , , ,				
									MANAGE AND STATE OF THE STATE O				
	<u> </u>		<u></u>					1.					
Relinquished By Relinquished By	<u> </u>	S	Sign	Han	Date/Time 44 HL 25 2006 Date/Time	A-Well Received By	Welch Sign	JUL 25 2006 Date/Time	S = Soil SE = Sediment SO = Solid SI = Sludge W = Water	atrix * DS = Drum Solid DL = Drum Lioui T = Tissue WI = Wine L = Liouid			
Relinquished By					Date/Time	Received By		Date/Time	O = Oil A = Air	V = Vegetation X = Other			
Relinquished By					Date/Time	Received By		Date/Time	MINIMINIA				
FINAL SAMPL DISPOSITION		Method	d (e.g., Return to	customer, per	lab procedure, used in proc	eess)	Disposed By		Date/T	ime			

PNNL 6	6250 WO4	33 19'	70	., 9-	CHAIN	OF (CUSTODY/S	SAMPLE ANAL	YSIS R	REQUEST	C.O.C.#	S06-007-68		
Collector & HALL	<u>, , , , , , , , , , , , , , , , , , , </u>			<u>ue /</u>	<u> </u>	ontact/Re	quester			Telephone No.				
SAF No. Dot Stews										509-376-5056 Purchase Order/Charge Code				
S06-007	S06-007 Hanford S							1/0//						
							SHUS-H	104		Ice Chest No. MC-4	42			
Shinned To (Lah) Severn Trent Inco	Lab) Method of Shipment Bill of Lading/Air Bill No. mt. Incorporated, Richland Goyt, Vehicle													
Protocol SURV			atti kirin kangi da kirin kirin kanan kangan ka		AND THE PROPERTY OF THE PROPER			ority: 45 Days		Offsite Property No.				
POSSIBLE SAMPI	LE HAZARI	OS/RE	MARKS					SPECIAL INSTRUCTIONS Batch all PNNL GW samples sub 14 days. Submit invoices & deliverables to	bmitted under "	W", "S", "I", "A" or "G" 06 S		mption: Yes V No L ot to exceed SDG closure of		
Sample No.	Lab ID	*	Date	Time	No/Type C	Container		Sample A	Analysis			Preservative		
B1JLC9		W	725-06	0631	1x1000-mL	Р	906.0_H3_LSC: Tritio	um (1)				None		
B1JLC9		W	1	T	1x20-mL P		Activity Scan		:	H903L		None		
		-		<u> </u>										
		1												
Relinquished By Relinquished By	Print		H	- Ju	8.8		Received By Received By	Print Sign Sign	h	JUL 25 2006 Date/Time Date/Time	S = Soil SE = Sediment SO = Solid SI = Sludge W = Water O = Oil A = Air	Matrix * DS = Drum Solid DL = Drum Lion T = Tissue WI = Wine L = Lionid V = Vegetation X = Other		
Relinquished By					Date/Tir	me	Received By			Date/Time		, , , , , , , , , , , , , , , , , , ,		

Disposed By

Date/Time

FINAL SAMPLE

DISPOSITION

Disposal Method (e.g., Return to customer, per lab procedure, used in process)

PNNL J 6	625 WC	03	324 970	ne 9-8	CHAIN (3-06	OF C	CUSTODY/S	SAMPLE ANA	ALYSIS R	EQUEST	C.O.C. #	S06-	-007-0	60
Collector	84.4				Con	itact/Rec				Telephone No. 509-376-5056	MSIN	FAX		
SAF No.					San	Oot Stewa npling O	rigin			Purchase Order/Charg	e Code			
S06-007 Project Title					E	Ianford S		10 H		Ice Chest No.	******			
SURV, JULY 200 Shinned To (Lab))6				Mad		S-SHWS-H	107		Ice Chest No. SMC- Bill of Lading/Air Bill 1				
Severn Trent Inco	rnorated. Ricl	hland		un maria de la compositiva della compositiva del	CONTRACTOR	Govt. Veh	hicle							
Protocol SURV							Prio	rity: 45 Days		Offsite Property No.				
POSSIBLE SAMPLE HAZARDS/REMARKS ** **								SPECIAL INSTRUCTION Batch all PNNL GW sample 14 days. Submit invoices & deliverab	es submitted under "\	Time W", "S", "I", "A" or "G" 06 S NNL	Total Activity Exer SAFs into one SDG, no	nption: Ye	es 🗹 No	o Le of
Sample No.	Lab ID	*	Date	Time	No/Type Con	ntainer		Sam	ple Analysis			Preserv	ative	
B1JLC5	Parameter street	W	7-25-06	0908	1x1000-mL P		906.0_H3_LSC: Tritiu	m (1)				l N	one	
B1JLC5		W	13000	1.	1x20-mL P		Activity Scan			H903M		N	None	
										14:6				
Relinquished By Relinquished By Relinquished By	Print	£,	Sign	OOF ———	Date/Time Date/Time	2006	Received By Received By	leh . We	8ign Elch	JUL 2 5 2006 Date/Time Date/Time	S = Soil SE = Sediment SO = Solid SL = Sludge W = Water O = Oil A = Air	Matrix * DS DI T WI I. V X	= Dru = Tiss	m Lioni ne e nid etation
Relinquished By					Date/Time	;	Received By	Constitution of the Consti	4.00	Date/Time		····	. 7,30	
FINAL SAMPLI DISPOSITION	E Disposal N	Method	l (e.g., Return to	customer, per	lab procedure, use	ed in proce	ss)	Dispose	d By		Da	ite/Time		



Da	te/Time Received: 7-25.06 /	147	•
Cli	ent Jow		'
Wo	ork Order Number: 166250324	NA[] SA	F#: 506-007 NA[]
Ship	ork Order Number: 166250324 pping Container ID:	of Custody#	60,64,68
1,	Custody Seals on shipping container intac	AIT Bill #	
2,	Custody Scals dated and signed?		NA[] Yes { I No[]
3.	Chain of Custody record present?	•	NA[] Yes HNO[]
4.	Cooler temperature: NALL	5:V/2	Yes [] No[]
6.	Cooler temperature: NA[] Number of samples in shipping container:	S. Verlingth of the packing m	aterials is NA [] Wet [] Dry []
7.	Sample holding times exceeded?		•
8,	Samples have:	1	VA-[] Yes [] No []
9,	custody seals	hazard appropr	labels riate samples labels
۶,	Samples are:in good conditionbroken		,
	·	leaking have air	L
10.	Sample pH taken? NA[] pH<2[]	l -rr of	ples requiring head space)
11.	Sample Location Sample Qui	adjust	ted pH[]
12.	No corrective acti	ion needed.	Yes [] No[]
:	Were any anomalies identified in sample rece		Yearly
13.	Description of anomalies (include sample nur	mbers):	Yes[] No, []
-			
Sample; (Custodian: A. Walch	Date: 7.	
Çlier	nt Sample ID Analysis Requested	-	5-06 14:47
		Condition	Comments/Action
!	pmed onby	Person contacted	
•	tion necessary; process as is,	, —	
	nager	Date	
LS-023, 12/	/05, Rev. 6		